

Marvel SCIENCE FICTION

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SEED

NEW NOVEL BY
RAYMOND F. JONES

VAN VOGT NEVILLE LEINSTER PHILLIPS LATHAM MERRIL TENN LEY



Marvel SCIENCE FICTION

ALL STORIES BRAND NEW — NO REPRINTS!

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SEED

by **RAYMOND F. JONES**

CHAPTER I — THE COLONY

THE SANDS of Mars hate the men of Earth. That's what the spacemen say, and they have fought the crimson deserts long enough to know.

But Nathan Ord looked down from the window of the ancient jet transport and wondered if they knew the reason.

He watched the turmoil of the sands, whipped by the ceaseless winds. He was seeing it for the first time, yet he felt instinctive understanding of the hate this planet held for men.

Mars had been clean before men came. Clean like a bone drying under desert skies.

Now it was a garbage dump.

**IT WAS THREE GENERATIONS SINCE THE LAST
RADIANT BOMB HAD EXPLODED ON EARTH . . .**

★ ★ AN IMPORTANT NEW NOVEL ★ ★



Only his fellow mutants
moved to help him.

He looked ahead of him in the cabin of the ship. There was Joey, the one legged. Joey had never had any more than one. There was Alice, the twin-head, one an idiot, the other blessed with incredible genius.

There was—

But he knew them so well he could close his eyes and see them all. They were the mutants.

They were garbage — and Mars is Earth's garbage dump.

Lassiter, the heavy faced guard, moved down the narrow aisle from the pilot's compartment. He looked over his charges carefully in preparation for imminent landing. His shifting weight

was felt in the motion of the decrepit plane that was bringing them from the spaceport of Heliopolis to the Mutant Colony. He sat down with a grunt in the seat beside Nathan.

"I guess it's about time for me and you to say goodbye, Doc. It's been nice knowing somebody like you this trip. Gets monotonous going back and forth between here and Earth. Once every month. It's always the same. Nothing but these walking nightmares to talk to. Sometimes I feel sorry for them, but gees it gets you after a while. When I start dreaming about them, though, I'm quitting. I promised myself that.

"I wish I could figure out your angle for sure, Doc. It doesn't make sense.

There was Alice the twin-head (blessed ironically with rare genius); and there was Joey the one legged (and, of course, an idiot); and there was—but Nathan Ord knew them all so well. Doomed to Mars, they were, Earth's garbage dump. The mutants . . .



Any of these would give their right arms—the ones that have right arms—to get back to Earth, but they'll never get there again as long as they live. But here you could turn around on the next ship and be there in a couple of weeks. So what do you do? You come out here like some noble missionary volunteering to spend the rest of your life in this hell. It just doesn't make sense!"

Nathan stared at the lolling, idiot head of Alice. "It's three generations since the last radiant bomb exploded on Earth, and still the mutants come. Somebody's got to find out how to stop it. They won't let me have enough mutants to work with on Earth, so the obvious thing is to go where the mutants are. That's here."

"It's there!" The guard pointed abruptly through the window of the plane. Nathan glanced ahead at a sharp angle. Rising out of the desert was a chunk of rock, utterly alone amid the red sands.

Its flat face was turned away from the flow of constant, surging winds, and at its base huddled the outcast colony.

Some of the mutants stared ahead, too, at the desolate cluster of structures. Nathan caught his breath at the lifeless masks that settled upon those faces he could glimpse in shallow profile.

Up to this moment their exile had been only a promised nightmare. Now it was upon them in all the terror of reality.

"It doesn't have to be that bad," he murmured to Lassiter. "They don't deserve anything like that—"

"What do you expect? The Law says they have to go to Mars and live there. There is never even half enough money to support the colony. Congressmen are under no pressure to provide funds for

garbage dumps this far away."

Nathan understood such problems well enough. Most of his own work had been done by necessity in government laboratories.

Lassiter moved away as the ship slanted down for a landing. It rocked even more violently as it whipped through the air stream pouring past the cliff edge. Then it was in the quiet zone and skimming toward the runway. When it touched, the sand was like a sudden clutching hand, but the pilot was used to such landings. He jockeyed to a skillful stop.

Nathan saw the attendants coming out of the administration building. The mutants were rising now as Lassiter loosened their fastenings and prodded them into action.

Nathan remained where he sat. In a moment the line of disembarking mutants appeared on the ramp under the wing of the ship. Nathan could not hear the words of the guards, but their manner spoke for them. Boredom, disgust and rudeness was common display toward their new charges.

Getting out of the plane, Joey lost control of the crutch that took the place of the leg he'd never had. He slid to the sand, bruising and scraping his arm and hands. An attendant snickered. Only his fellow mutants moved to help him.

I should be in line with them, Nathan thought. I have no right to be separate from them.

But only by being separate could there be any dream of helping them—or himself.

He shook himself wearily and gathered up the small leather case that held the important elements of his research

and clumped slowly down the aisle.

He came out of the plane, a rumpled, undistinguished man of forty-five with a touch of gray at the tips of his black hair. His face held the look of one listening quietly to other sounds that no one else could hear.

The attendants regarded him with uncertainty for a moment, hesitating to class him with the mutants, then remembering that there was a Dr. Nathan Ord who was coming to take over the research laboratory.

One of them stepped forward, a brash youngster obviously aware that Nathan might someday be in a position to recommend advancement.

"Dr. Ord?"

Nathan nodded, glancing at the dismal stone and adobe building. "Please show me the way to the office of the Chief Administrator."

The attendant offered to carry the leather case, but Nathan shook his head and followed along.

The halls of the administration building showed their age and long neglect. The colony had been in existence for eighty years, and the building was old. The stone floor was worn concave, and the walls bore no trace of the paint they might once have had.

Nathan came to the door marked: Chief Administrator, H. K. Davidson. He entered behind the attendant.

Davidson did not bother to rise as they were introduced and left alone. He motioned carelessly to a worn chair beside the desk and Nathan pulled it up.

For a long time he said nothing. He eyed Nathan while he munched grapes from a bowl on the desk, grapes that must have come from the hydro gardens in Heliopolis, Nathan thought.

Davidson was big and languid, accumulating fat needlessly. His round face had an oily hue, its expanse broken by a ragged black mustache. He wiped his fingers at last on the broad thigh of his rumpled white suit and spoke.

"It's always hard to know what to say to a new man when he comes into this little hell over which I have the honor to preside," he said. "Ordinarily, I don't say anything. A man comes here because he wants a job, and if he hasn't got the guts to turn down an offer like this, he's not much better than the mutant trash out in the compound."

Nathan made no remark, but weighed the bitterness of Davidson. In it was danger, the danger of a sheer, stupid animal. All his life he had been fighting men like Davidson and he was utterly weary of it. But one more wouldn't matter now.

"You're different," Davidson continued abruptly. "I know about you—all about you. A first rate man doesn't give up Earth and come here for nothing so I looked up your record. You could have had this job five years ago when Morrison died. Did you know that?"

"Yes," said Nathan. "I knew."

"You were too wild then in your preaching that the mutants could be left on Earth, that they could be cured and left there like human beings. Some very influential Congressmen didn't like it one bit."

"I've said nothing —" interrupted Nathan.

"Oh, no! You learned your lesson. You kept your nose clean and went on to become the top man in mutant biology in the whole damn' System. They

could hardly turn you down then. So you finally arrive here—I wonder why —” Davidson’s voice was mocking.

“I had to go where mutant research was possible. That’s here. That’s why the lab was originally established here—in case you’ve forgotten—to find a way to eliminate the production of mutants completely. That’s my basic research. I have no intention of offending sensitive Congressmen.”

“You see that you don’t, and we’ll get along all right. Publish all the cute little papers you like on what genes are lacking in a mutant who hasn’t got a head, and get your name spattered all through the little journals that go for that sort of thing.

“But just you open your mouth one time about leaving mutants on Earth and emptying the colony of them, and you’ll think that forty thousand tons of Mars desert has been dumped on you. I’ve got a good record here. The budget department likes the way I handle their money, and in another year, I’ll be due for transfer. Do you understand?”

“I understand very well, Mr. Davidson. I am sure that we shall get along.”

“Good. You’ll find the lab buildings over on the north end of the area, next to the compound. Doc Collins will show you around.”

It was worse than he had supposed, Nathan thought. Davidson was a dead-end, on his way down, not up. Nathan had seen his kind before, shuttled into some obscure office from which he would never rise, eating his heart out anticipating the promotion that would never come. In the years to come he

could make the colony a place of supreme misery for Nathan.

CHAPTER II

DEATH IS THE PENALTY

THE LABORATORY was housed in an equally run down building. He found the door marked Chief of Research, and entered. Inside, a young man in a lab smock was sitting at the desk scribbling a hurried memorandum. He looked up to Nathan and his eyes lighted with excited recognition.

“Dr. Ord!”

He hurried forward and grasped Nathan’s hand. “It’s wonderful to see you, sir! You’ll never know how much I had hoped it would be you to fill this position.”

Nathan smiled. “Thanks. I’m glad to know someone besides myself held that same hope. You must be Dr. Don Collins.”

“Yes. Excuse me for not introducing myself. The prospect of being able to work under you is somewhat overwhelming.”

Nathan enjoyed the kind enthusiasm of Don Collins. It would be pleasant working with this youngster, he thought. He had seen some papers of Collins’, and they were very good.

The office was dismally furnished with ancient chairs and desks and filing cabinets. Don caught Nathan’s distasteful glance.

“It’s not very nice, but it’s only preliminary to the lab equipment. We don’t get much money out here, you know.”

“So I understand. Let’s have a pic-

ture of the whole background. I've met Davidson. What more do I need to know?"

"If you've seen Davidson you can visualize the colony. The poor devils out there live like animals. After a few weeks their spirits are as twisted as their bodies. I hope you're right about the possibility of stopping mutation and returning the mutants to society."

Nathan glanced up sharply. "Who told you about that?"

"You did—why? I was just a kid in school when I read your early papers on the subject. They inspired me to turn to genetics in the first place. I was pretty idealistic then, and I've never forgotten it."

"It seems to be a pretty dangerous ideal to have around here."

"Davidson? Yes, of course. I never mention it. Not even in the lab. But I haven't forgotten it. We can find ways to work around the barriers. That's what you came for, isn't it?"

"It's the only reason I came, but I'm five years late because I talked too loud before."

"Can you tell me anything about the procedure?"

"My work shows that destructive mutations have taken place on a molecular level. The original radiation of the bomb attacked the genes of the mutants' ancestors and caused a twisting of the gene molecules, like a pattern of asymmetrical beads distorted by twisting some of them.

"This distortion had been handed on to subsequent generations. Sometimes it passes for generations as a dormant, then breaks out as you see it doing in the colony.

"My discovery consists of a means

to restore the proper alignment of gene molecules by a counteracting field."

"You have developed such a field?"

Nathan nodded. "I have more than a thousand case histories of test runs on animals. There were no failures. Now I need to prove its applicability with respect to human beings. I expect a freight ship to bring my equipment within a day or two."

"How do you proceed with the work?"

"Parents are treated with the field before conception of offspring. The latter can then be tested in every known way and shown to be perfectly normal."

Don's eyes lost some of their light, and he sagged visibly. "Then I'm afraid there will be no opportunity here for testing your field on human mutants," he said slowly.

"Why—why do you say that?"

"Didn't you know? There are no births here in the colony. None at all."

Nathan's face whitened. "No! No one ever told me that. Why?"

"The colony is subject to general administration by Davidson's office, and the mutants are subject to examination and observation by us for research purposes, as you know. But the internal organization of the colony is entirely a matter of self government by the mutants themselves."

"What has that to do with the absence of births?"

"It is forbidden by their own laws. Death is the penalty."

Nathan turned his head slowly until he could see the distant compound through the window of the office. He could see the dismal huts of stone and mud and glimpse ant-like figures moving about in dejection that was suggest-

ed even at this distance.

He could understand. He could understand their determination to let their horror die with them.

It was the thing he would do in their place.

"We will have to persuade them to cooperate with us, then," he said at last. "And we'll have to do it without exciting Davidson."

Don shook his head. "You don't know what you're saying when you suggest such a thing. They're bitter and full of hate towards all mankind. Nothing would persuade them to cooperate. They don't *want* to return to humanity or to have descendants. They want to die."

"Nevertheless," said Nathan. "We must have their help."

He put off any contact with the mutants during the remainder of the day. There was plenty to do at the laboratory, getting acquainted with the meager personnel, surveying the equipment with which he would have to work, and trying to fit the scope of his research into the limited means available.

But through it all he knew he was dodging. Dodging the true problem of the mutants' refusal to reproduce themselves. The Law permitted him wide latitude in demanding the mutants for tests and examination that did not involve "cruel or inhuman practices." But he could not force them to procreate. That was outside the bounds of the widest interpretation of his rights over them.

He delayed until midmorning of the next day and then asked Don Collins to show him around.

The compound was actually not a

definite enclosure. The administrative buildings, rather, were the ones enclosed. Lumpy adobe walls protected them from the invasion of sand and wind, and a crude stone wall separated the administrative area from the mutants' territory. The latter was thus bounded by the rock eminence on the north, and the fenced-off administration area on the south. On the other two sides there was only the desert and the wind.

Mutants occasionally walked into the desert. They were not missed. No search was ever made for them. It was eighteen hundred miles to the nearest point of civilization.

A guard was stationed at the gate of the compound. He opened it ponderously as Nathan and Don approached. What purpose the guard served, Nathan could only guess. Certainly there was no danger from the poor charges who were locked forever beyond that gate.

Ahead of them stretched a dozen alleys of stone and adobe houses, as hopeless appearing as the human beings who inhabited them. A few mutants sprawled dismally before the walls, trying to catch the few, precious hours of warming sun. Others moved about the streets in futile tasks. In nearly all, the product of crazed genes was visible even at a distance.

"How many are there?" asked Nathan.

"About twenty thousand at the last count. Davidson doesn't worry too much about a census except when the housing gets so bad he has to spend money."

Nathan was appalled at the thought of that number of sick and weary hu-

man beings here. Yet he wondered that the number was not greater with all of earth to draw upon. He asked Don about that.

"The turnover is fast," said Don. "A few long-timers have been here for twenty-five or thirty years. But even taking them into consideration the average life of a mutant here is only four years.

"After they've been here a little while they just don't seem to want to live any more."

Nathan looked at him. "Would you?" he said.

* * *

John Rodin was the internal leader of the colony. No one could remember his coming, for the rest had been children then or were younger in exile than he.

He was a man who gave an air of stupidity at first glance, and that was the way that Nathan saw him.

He was sitting by the narrow window of his hovel when Don led Nathan in. Rodin nodded sullenly at the introduction and continued staring at the distant hill of rock.

Nathan watched the emaciated figure in silence. It was more like a bundle of sticks and burlap than a human being sitting there. And then he saw what the nature of Rodin's mutation was—or had been. The man's head was bent forward and to one side at a grotesque angle, and on his shoulder, pointing back, was a ragged, scarred stump.

Rodin had been a twin-head. As with so many, one head had died. But, as with so few, one had been mercifully amputated.

"I know you," Rodin said, finally, without turning. "I know you and I

want nothing that you have to give. I want you to leave us alone."

Nathan stepped farther into the room. "How do you know me?"

Rodin turned then from the window and was shaking with rage. "We are not the stupid savages we ought to be in this hell. We still find out things that go on back home, and we know all about you!"

The words, "back home", from Rodin sent a chill through Nathan. This withered man, forty years a Martian exile, still spoke of Earth as "back home."

"Tell me what you know of me," said Nathan quietly. "Perhaps there are things I would like you to know that you haven't already found out."



"Let me tell you this: We don't need your help. We know what we have to do, and we can do it alone."

"What must you do?"

"Die. That is our contribution to humanity!"

"What would you give," said Nathan, "to be like other men, knowing that your seed might reach to the end of time?"

Rodin's eyes seemed to take the chal-

lenge. He stood suddenly erect by the window and pointed furiously at something beyond Nathan's sight.

"Like other men—? Look!" he commanded. "There is my child!"

Nathan stepped to the window. He stared in the direction of Rodin's pointing finger.

Turning a pathway that led to the house was a woman dressed in heavy shirt and trousers. Protection against the incessant spurs of windborne sand, and the chill of Mars' thin air.

The rough clothes did not hide the tender grace of her stride. Her face was marked by firm maturity that gave Nathan a momentary sense of peace that was strange to him. He searched for a word to describe her. Alive.

For a brief moment Nathan thought that she must be no mutant—and then she turned and faced the house, following the pathway to the door. Her right arm was a diminutive and useless thing.

"I should have had the strength to kill her the day she was born, but in those days we still had a faith that somehow things would work out for us."

Nathan continued to watch her, baffled by the serenity on her face. Then he understood.

"She has never seen Earth, of course," he said.

"She was born here, a native of hell," Rodin grunted. "There were lots of children born during our first years. My wife, Della, and I had hope and we believed that life could go on for us. Then we learned better. Most of the others have died by now. Joanna is almost the last of those born on Mars."

She was thirty-five or a little more,

Nathan thought. There was maturity on her face, but not yet the signs of aging.

She entered the house abruptly and started at the sight of the stranger.

"This is Dr. Ord," Rodin said. "You have heard of him."

He took the firm left hand she offered.

"My first greeting to everyone who comes to the laboratory is the same," she said, laughing. "Did you bring any books with you?"

"At least a million feet of tape, but it's not very exciting stuff for a long, cool evening. The word 'gene' is on every other page."

"I don't care. I want to read anything and everything. They give us no books at all, you know. Only the lab men let me read theirs. You'd be surprised what I know about controlled mutation and heredity cycles — and model spaceships. One of the technicians had a hobby of those a long time ago.

"But it's a geography I'd like most— of Earth, of course. I've seen a few pictures, but I want so much to know all about it. I never expect to see it, but everyone who comes here speaks of their coming as exile from heaven. I want to know what they mean."

"The exiles remember only the good things of Earth," said Nathan, "and see only the bad of Mars."

"And you will let me see your books?" she insisted.

"Joanna!" Her father shifted nervously.

"I don't mind at all," said Nathan. "Any of you are welcome to read anything in my library. I'll try to get some you'd like. I should think the Admini-

stration would have seen to it that you had books."

"They do not consider them necessities for dead men," said Rodin. Then he added, "And neither do I! They torment us with things better left forgotten."

"I'm *not* dead," said Joanna. "I'll come over to your library if I may."

"I forbid it!" Rodin exclaimed. "We want nothing of your gifts or your favors. You can't change our laws that way. You can force us to be your guinea pigs to a degree, but not for the purpose that brought you here. Davidson himself will not—"

"I have not come here to break your laws," said Nathan. "I came because I am a man and you are a man, and I think I can help you in the trouble you are in."

"There is no help for us. I forbid Joanna to come to your library! I forbid her any reading of your books!"

Nathan stared at him coldly for a moment. "And I request her presence to assist with a new program of research which is beginning at once."

He turned to Joanna Rodin. "You will please report to the laboratory in the morning."

CHAPTER III

MUTANTS ALSO DREAM

THERE WAS reorganization and survey of the laboratory to fill the afternoon, but Nathan could not get the thought of Rodin off his mind.

He could understand easily how a man could long so much for a child of

his own that the whole world became bitter when the child was irrevocably harmed.

He thought of the years of his own longing for his child that could never be born—because he was like John Rodin and Joanna, and Alice, and Joey—

But he had known of his damaging hurt from the very beginning. His own father had showed him, and hidden him well in the great genetic laboratories of the world, where no one might suspect him, and where he could pursue his life-long search to help himself—and others like him.

His thoughts went back to Joanna Rodin. His mind had been so intent on the biological aspects of the mutants' problem that he had ignored the personal side of the question up to now.

Of those whom he might make capable of having normal children, how many would want to? How many would find their defects mutually repulsive so that they would have no desire for mating? Among them all was there any whom Joanna would be willing to accept?

But making sure of methods in regard to human beings was the first consideration. Gene maps, by themselves, could prove that, genetically. He had to lay the other worries aside for the time.

When Joanna appeared he was somewhat startled by her conventional dress which had replaced the rough clothing of the day before. He sensed that it must be the only thing of its kind that she owned, and he felt pleased that she should have worn it.

But she was subdued from her previous buoyancy, as if she had come re-

luctantly and only at his command.

"I'm ready," she announced solemnly as she entered his office.

He rose and offered her a chair. "I'm terribly sorry about yesterday," he said. "I owe you both an apology for my rudeness."

"You were perfectly within your rights. In fact, your order was a needed reminder of our proper place."

"And what is your proper place?"

"Exiles, outcasts — so I am told — have no claim upon mankind for just and equal treatment."

"So you are told—but do you believe it?"

"Of course not! But I find myself pretty much alone in the things that I do believe. It's hard to persist under such conditions."

"Would it help to know that I share your belief?"

"You—? No, I couldn't believe that. You *belong* — we are outcast. You could never share anything with us."

Her eyes opened wider as she turned then to face him more fully, and she scanned his face with nervous intensity. Gradually, it seemed to him that some dark tension released within her.

"Perhaps you could," she said at last, "just a little. I don't think we've ever had anyone in Administration quite like you before. Why did you come?"

"I told your father the truth. I came to help you."

"You aren't telling me all of it," she said, "but I believe you are my friend. Tell me what it is that you want of me."

He opened his mouth to speak and stopped. New doubts about the thing he planned flooded into his mind. He let his eyes take in the whole picture

of Joanna sitting there in the sunlight — the firm, sweet lines of her body, the spark of life in her eyes that were surely the brightest on all this drab planet.

She was the ultimate that the colony had to offer. In any human society she would have been marked for beauty and intelligence. Her deformity was a minor thing; it could be ignored by anyone who looked into her face.

It would be better to work with Alice or Joey, or John Rodin until he was more certain of what he could do, until he had evolved the technique for human application of his discoveries.

Yet—it was for the best of them, like Joanna, that the work was being done. And he had no real doubts of its success—

So he told her then how he had been able to right the genes of animals that had been exposed to the cruel force of the radiant bomb. He told her of his hopes for the multitudes of Earth who still bore such ruinous gifts for future generations. He neglected to tell her only his hopes that the present generation of mutants could somehow be salvaged back into the human race—and his own personal need.

When he was through she smiled wistfully. "It sounds very good, but I can scarcely understand the things you say of Earth. The only world I know is Mars. The only people I know are mutants. Everything else is of some imaginary world which I can never hope to know."

"I am told how mutants are captured, robbed, torn from loved ones sometimes—and sent here. I wonder if it is a proud thing to be a part of this mankind of which you speak."

"I wonder, too," said Nathan slow-

ly. "But whether we can be proud of it or not we *are* part of it, and the only possible goal is trying to make it just a little better than it is. That is what I am trying to do."

"Then I think I should like to help you," she said.

* * *

In the laboratory, he secured specimen ova from Joanna, and the assistants prepared them for examination.

Joanna watched with patient interest as Nathan peered intently through the eyepiece of the electron microscope, matching her gene pattern against standard maps.

Nathan was accustomed to seeing such things in his research, but somehow the sight of Joanna's gene pattern turned him a little sick.

Damaged genes composed a map of horror. It seemed as if every conceivable mutation had lodged in her chromosomes. He looked up, appalled.

Joanna turned her head quizzically at his strained expression. "What is it?" she said.

At first he hesitated, and then he remembered that she could easily understand from her wide and varied reading the significance of what he saw.

"Would you like to look?"

She came forward and bent over the eyepiece. A gasp escaped her as she recognized the ruin.

"I'm glad father was so fanatic about my remaining unmarried," she murmured. "Now I can understand how he and mother must have felt about me. They should have killed me!"

"All of that would not come out in any one individual or generation."

"But some of it would — and the rest would go on."

"Yes."

"A twin-head, or a no-legs—or a baby arm like mine. Thank God my seed will end with me."

"But now that you have seen this you will be able to understand the magnitude of our success if we repair the damage."

"Repair it? To what purpose? It still has no meaning."

"Is there no one—no one at all—you would be willing to marry, if there were no gene deformations?"

"There was—once. But that was so very long ago. He was a sweet boy—he had no arms at all. But we vowed that we would break the law and go away into the rock cliffs and live by ourselves. It was a very young and very foolish dream. He did not live long afterwards."

"But you *will* help in the experiment—willingly?"

"Willingly. Perhaps I can help you set a pattern to be used on those for whom it will be more productive."

She took some tapes that he offered from his large library, and he promised he would get her more of the kind she wanted.

When she was gone that afternoon he felt a depression that he could not explain until he recalled how pleasant it had been with her there.

He smiled to himself. It was just a little late for him to have such interests. He had avoided feminine society for much too long.

He went to the window and stood there, hands clenched behind his back, watching the compound. He thought he could see Joanna walking slowly

towards her father's hut.

Why should it be too late?

He shook his head savagely and moved from the window. They were worlds apart. The world accepted his disguise as a normal. It would never accept her or her kind. Not in their lifetimes, anyway. It would take a generation of proof before the revulsion towards the mutants would die even with the cure he had devised.

He put the thought of Joanna Rodin out of his mind and turned to the task before him.

CHAPTER IV

MOUNTAINS OF EARTH

DURING THE following weeks, Joanna was required to come every day for treatment. It was slow and painstaking work to determine empirically the optimum field and exposure. Each time she had to wait through long intervals while testing and computation went on to establish rules for use of the field on human beings.

In these intervals Nathan managed to spend much of the time with her while the assistants performed the routine computations.

He guided her through the bewildering vastness of his technical library.

She knew virtually nothing of the history of Earth. Her own life had almost no links to the past, yet she could discuss—in technical detail—the ways in which her deficiencies prevented her from becoming any link with the future. She was a human island in time.



The history and geography books which Nathan ordered for her arrived in time for her thirty-eighth birthday.

He had the package wrapped and on his desk when she entered that day. As he busied himself she glanced at the unfamiliar object curiously. Then she read the white card which bore her name and birthday greetings.

She looked at him, her face flushed with embarrassment as always when he made some reference she did not understand.

"What does this mean?"

"Happy birthday!"

She laughed, and it seemed like the ugliest sound he had ever heard, for she was laughing at him.

Then, just as abruptly, she stopped and her glowing face paled with grief. At the corners of her eyes he saw the start of tears.

He rose swiftly and rounded the desk. He put an arm about her and tried to still the quiet sobbing.

"I didn't mean to hurt you. What did I do?"

"Don't you see? To a mutant, the day he is born is the day he dies."

He let his arms drop away from

Joanna. He glanced down at the package, the white card, and the bright ribbon.

He had made so little effort to find out the little things she thought and believed. He tried to carry on as if this little world of the laboratory were an utterly normal part of Earth, but now he realized it was no more than a bridge—a shaky bridge between two impossible worlds. He tried to accept Joanna as a normal and treat her as a part of the world from which he came. To her, it was only mockery.

He tore the wrappings off the package and turned the spools slowly in his hands.

"It's just the books I promised you," he said. "Maybe you'd rather look at them some other day."

She recovered quickly with apology in her eyes. "Oh, no! I'm sorry I let it bother me. I know you meant to be kind. Let me see them now. I can take them to the reading room where I won't be in your way."

"Let's look at them right here together."

He led her to the reading machine on the other side of the room and she sat on the broad couch before the screen. He slid a spool into the slot and turned the switch.

"What kind of a voice do you like?"

"Make it your's."

"You'll find it boring."

He adjusted the controls, duplicating his own voice, then sat beside Joanna on the couch.

The screen burst suddenly into three dimensional color revealing a great mountain peak of Earth, capped with snow, and burdened with the cloud-

laden sky it seemed to uphold.

Nathan watched the woman. Her breath came quickly at this revelation of Earth. The words of the reader were lost on her.

There were shown visions of roaring, white waters, and broad plains, and harsh, deadly wastes. Only the sight of the latter, so much like her own surroundings, quieted her.

"It would terrify me," she whispered, "to see such a world as that—but I want to!"

"You will — someday," Nathan promised, and then regretted it. Joanna was of Mars. She was born on Mars, and she would die on Mars. For her there was no escape.

For her—and for him—there was no hope.

* * *

Progress was being made. The slow biological processes of repair were restoring the cells of Joanna's body to normal patterns. From the first success was evident. Nathan's ghostliest doubts vanished. If the process could be spread there would be no need for mutants to be born anywhere as a result of the ancient madness that had led to the radiant bomb.

And, suddenly, his accomplishment seemed empty. He had made Joanna potentially fruitful, but to what purpose?

Standing by the window, watching her cross the sandy stretch beyond the gate, he wondered why it bothered him. He had accomplished the thing he had set out to do. Joanna as an individual didn't matter. There would be ways of introducing his process on Earth, and tens of thousands of potential mutants would never realize the

danger with which dead generations had once threatened them.

He wondered why this was not enough. And the answer to that was so easy that he smiled bitterly as it came to him.

The answer was that Joanna did matter.

He had *believed*, he had hoped, and he had somehow known that there would be a time like this and a woman like Joanna. His only fear was that now it was too late—much too late.

She came into the office and took off the rough jacket that covered the dress she wore each day to the laboratory. She regarded his lack of preparation.

"Aren't you ready for me, Nathan?"

He took her arm and led her to the seat by the window. In his hands he carried her latest gene map and its standard comparison. He handed them to her.

"We're all through," he said. "Case number one is successfully completed."

She glanced down at the charts with a quick movement of shock. Then she passed them back with scarcely a moment's examination. For the first time there seemed nothing between them to talk about any longer. There was no reason for her to come to the laboratory again—ever.

She seemed embarrassed as if they had suddenly become strangers. "I'm glad," she said finally. "I'm glad that it was not a failure. What will you do now? Try to get it used on Earth to detect and cure potential mutants?"

"That — eventually. But something more is needed. I need the final evidence that mutancy can be cured."

Her eyes went wide amid the paleness of her face. "I can't give you that,

Nathan. You can never get that evidence from me. If I'd known that you would demand that—"

"Joanna—" He touched her arm. "Joanna—with me, could you give the world that evidence—?"

She darted from his touch as if stung, and backed against the desk, her breath heaving the contours of her breast. Then slowly it quieted and the flush subsided in her face.

"Don't say any more, Nathan. Please don't say any more. Just let me go out of here, and don't ask to see me again. Please, Nathan—"

"I'm the clumsiest fool in all space. What I'm trying to say, Joanna, is—that I love you. It's hard to say because I've never said it before, and I'm so far past the age of learning how."

Her eyes moved swiftly, searching his face for some tell-tale betrayal. "I could forgive you any clumsiness except the one I thought you meant. I'm still human, and there has to be a point at which the experiment stops."

"That point was passed long ago," he said. He stood close, daring to put his hands upon her. "I want you to marry me. There will be children to show the world it needn't be afraid any more, but it's not for them that I want you. It's for myself."

She moved aside, out of his reach, then looked up, and her eyes were glistening. "Thanks—thanks so much, Nathan. That's the most wonderful thing that has ever been said to me."

"You know, of course, what the answer is. You couldn't live in my world, and I could never come to yours."

"You still don't understand. You see—I'm one of you."

"You—a mutant?" Joanna faltered.

"Yes. A carrier. I was fortunate to find it out before I let myself love anyone. The research of my whole life has been to cure myself. Now, I can."

He led her to the window seat again. "For a long time I believed that it would come much too late for me. But now I wonder. Can you answer my question?"

"I don't know what to say. You are stirring up everything I thought was dead and buried in me long ago. Surely you know what these weeks of coming here have meant to me. Or have I hidden it so well you couldn't tell?"

"I'm afraid I've forgotten the signs if I ever knew them," he said. But the things you have tried to kill never die.

"In the laboratory I used to hear the girls talking. They would go along at a steady, dull pace, then suddenly come alive. I always knew what had happened. Some boy had appeared on the scene. I lost a couple of dozen good assistants that way.

"And the men, they would talk, too. I'd hear when their babies were born, and I'd hear of the first steps they took. I'd hear of them growing up and going away. It was like standing still and watching all of life flowing by—and being unable to get in the stream of it.

"Wanting to be in the stream never dies until you're dead yourself."

Almost unnoticed, she had relaxed and leaned back against him. He pressed his arm about her waist and touched his face to her hair.

Her hand crept to her breast as if it swelled with some deep ache. "Children—it's like carrying some pleasant dream all your life, knowing it could

never come true. But its coming true is frightening. I'm afraid of it. It's something that can't happen to me."

"It can."

CHAPTER V

ESCAPE

AFTER A TIME, she turned her head and looked up into his face.

"What are we going to do, Nathan? This is a crazy, foolish dream. How will we live? *Where* will we live?"

"I'm taking you to Earth," he said.

"They'd only take me away from you and bring me back here!"

"There are a thousand cities and towns where we can lose ourselves. We'll disappear so completely that they'll never find us."

"How could I hide with this arm? They'd know I was a mutant anywhere. And what of your work? You can't give that up, just for me."

"I won't be giving it up. It's done. I've finished all that I set out to do. Don can take over from here.

"We can easily build you an artificial arm to hide your mutation before you go. We'll never be found out, and our children can go into the world free and clean."

"Oh—I don't know what to say!" She pressed her cupped hand against her face. "It will be hiding, hiding for the rest of our lives, fearing that at any moment we'll be trapped and separated. I couldn't bear that. I'd rather not see you again, ever."

"Wouldn't you like to see Earth?"

"Oh, yes! Mountains and clouds

and white water—to see the home of my people—”

“It will be worth it, darling. I’ll take care of you so that you’ll never be afraid again. I promise you that.”

He told Don the next morning of the plans he’d made. The assistant was caught between his instinct to offer congratulations, and the sudden shock of this bizarre contract.

Finally, he blurted out. “How can you make it, Nathan? Joanna Rodin is a wonderful woman, but it’s an impossible situation. She’s a mutant.”

“You didn’t know that I was one, too, did you?”

Don sagged into the chair beside the desk, disbelief flattening his face. Nathan gave him the full story.

When he finished, Don was smiling faintly. “Well, I can offer congratulations, and I sincerely hope you find what you’re looking for. No one ever took on more of a load than you’ll be carrying. I’ll help all I can.

“How do you plan to get away from Mars with Joanna? And what will Rodin say if you tell him? You can’t even get married, if you want to.”

“I’ve figured out the last one, anyway,” said Nathan. “Rodin has civil authority as the leader of the colony. He can marry us.”

“He’s likely to be overjoyed at that opportunity!”

“As for getting away, I think you can help there, too. A Genetic Congress is due to meet in New York in two weeks. You and I will plan to attend. That is a perfectly legitimate excuse for getting away.”

“Me!”

“Yes, we’ll apply to Davidson for permission to leave. We would go, of course, on one of the planes that brings mutants from the spaceport. But you won’t be on it with me. Joanna will.”

Don’s face paled. “It won’t work, Nathan. We’d never get away with a crazy scheme like that. There are a thousand ways to slip up.”

“We’ll see that none of them occur. The plane invariably leaves in the evening because none of the pilots like to spend the night here. Boarding it will be an inconspicuous procedure. There are seldom any passengers, and the pilots don’t know us, personally. Joanna can wear your clothes; she’s almost your height and weight. We’ll make it all right.”

He tapped his fingers on the desk. “I have not completed my own treatments for mutancy. That will have to be done with equipment I can assemble on Earth. The data we’ve got on Joanna’s case will make it much easier than hers was.”

“What’s going to happen to me if I don’t go with you? Where am I supposed to disappear?”

“Hide out in the compound with the mutants until time enough has passed so that we could be expected back. Then you can report to Davidson as if you’ve come in on freight ship. He’ll never know the difference. You can carry my letter of resignation with you.”

“It’s crazy — but I hope it works for you!”

When he was alone, Nathan gathered up the records of Joanna’s case and left the office. He strode across the yard to the compound gate.

The most critical factor in his plan was Rodin. The mutant leader had to be told, and he had to be persuaded to cooperate. Without this, there was little hope of getting away. Joanna couldn't simply disappear, and Don couldn't be left without a hiding place.

The bitter night-cold was still in the ground beneath his feet. Sand haze curtained the sky and desert beyond the cliffs, enclosing the mutant area in crimson draperies. In this fierce world the mutants were surviving only by a shoddy miracle, he thought. It made him feel sick to think of Joanna's store of wasted years in this place.

Nathan came to Rodin's door and knocked on the thick insulating panel still battened against the cold of night.

Rodin himself opened it. His face darkened at the sight of Nathan. "Joanna's not here," he muttered.

The geneticist held out the packet in his hand. "I have something to show you."

"Why can't you leave us alone?" But even as he spoke, the mutant backed from the door in resignation, and allowed Nathan to pass.

He led the way to a rough table in the almost barren room and sat down. Nathan laid the packet on the table and spread the microphotographs in front of him.

"You know enough genetics to know what this means?" he said.

"I can read a genetic map."

"Good. Here is Joanna's chart before treatment. You can see the damage that was there. Perhaps you can read the patterns involved."

"I can read them. I've seen them before when others used her for a guinea pig."

"And here are the new one — taken at completion of the treatment."

He laid another set before the man and waited in silence while Rodin glanced and rejected them. And then glanced sharply again —

Rodin caught his breath. He picked up the photo in nervous hands and stared in the dim light from the window slit. Then slowly he put it down and looked at Nathan.

"Can that be Joanna's?" he breathed.

"Joanna is free."

For a moment Nathan thought the old man could not hold back the tears that flooded behind his eyes, but he only shook his head in solemn disbelief.

"You're not lying to me?" he pleaded.

"No. I'm not lying. Joanna is free, and your seed has not come to an end — need not come to an end. Through Joanne can be born perfectly normal children."

Then Rodin crouched suddenly at the edge of the table like some threatened beast.

"By whom?" he demanded.

"Me," said Nathan.

"How far can you go?" Rodin cried. "Can't you understand she's human, not an animal to be experimented with and discarded? I won't let you have her anymore. Davidson will back me up. You have no right to treat her like an animal!"

"I'm asking Joanna to be my wife," said Nathan quietly.

"I want to marry her and take her with me."

Rodin had risen in anger, and now he sank down to the bench again.

"I don't understand," he said weak-

ly. "What do you mean? How can you marry her and take her away? There is no place for her kind except here—"

Swiftly, then, Nathan gave the old man the story he had told Joanna and Don Collins, the story of his own private exile among his kind.

"She can go home now," he said. "She can be the first of her kind to return. You remember Earth. Surely you would want Joanna to see it.

"You have authority to marry us. I am asking you to do it, and let her go with me."

Rodin waved his hands feebly. "She doesn't belong there. You could never teach her how to live there. She's a mutant."

"Not any more. She's a normal human being and she has a right to live with her kind. You haven't the right to deny her that."

"You're a mutant, too," said Rodin thoughtfully. "Your place is here with us, not with our persecutors on Earth—I'll be gone soon, and there'll be need for a new leader, a strong one—"

Nathan felt sick inside at the old man's perverse insistence. "Someone's got to bridge the gap back to Earth. Through my work there will come a day when no one will be exiled as you were. We can't help you, but we can help a million others who might pass through this hell before they die.

"And we can help Joanna's sons and daughters. There is no need for them to ever know what this world is like."

"All right," he nodded slowly. "I'll do it. I remember the old words."

The wedding ceremony was a simple thing. Only Don was there to witness.

Rodin had even found a yellowed marriage certificate among the forgotten store of papers and documents whose neglect measured the deterioration of his administration within the colony.

And he gave them the ring that Joanna's mother wore.

When the final words were said, Nathan could not repress a tremor. It was as if a strange and mighty thing had been performed. Joanna felt it too, and in her eyes he caught a quick and fleeting terror.

He touched her and drew her towards him. The future lost its appalling uncertainty as his arms closed about her body. And, for the first time, he knew how lonely he had been all his life.

Something of their mood communicated to Rodin. Unaccustomed smiles threatened the spider's web of wrinkles that the years had laid upon his face. His pallor was tinted by a high flush of excitement.

He disappeared into another part of the house and returned with a dust covered bottle.

"This has been around a long time," he said. "But there's no use keeping it any longer."

Joanna stared at it and Nathan laughed with Rodin in the old man's excitement. "Where in the world did you get that?" he said.

"It was left over — from my own wedding. Della and I were so sure then that the future would be all right that we vowed to save it and drink at the wedding of our child. Then — when we knew — I wanted to break it, but she always said no, there might be some other big occa-

sion that would call for it. I had forgotten it until now. It's been buried so long, but it's been kept from freezing. I think it's still good."

It was. He poured the sparkling Burgundy into battered cups and proposed a toast.

"To our descendants," he said.

* * *

There was a plane that afternoon and arrangements had been made with the pilot to carry Dr. Ord and Dr. Collins to the spaceport.

Nathan brought some of Don's clothing for Joanna to wear. As the sun lowered, making a final bloody mist of the sand haze, Joanna changed clothes and packed a few personal belongings in a tiny bag.

Alone, in the room that had been her own during all the long years of life on Mars, she regarded the little pile of goods that she could take. Waves of fear seemed to rise up from them and engulf her again. It was a little like dying, leaving the only life she had ever known. There was nothing of it that she could take with her, except this pitiful pile.

And she *did* want to take other things with her, she thought. She wanted to remember forever this wild, harsh world that had been her home. She could understand the desert. She understood the loneliness of it and its fierce resentment of the intrusion of man. She could understand the dusty, choking shroud it thrust up against the sky in self defense against the great golden ships. And she could understand the lonely, hollow, mocking voices of the great winds.

It was like the mutants themselves, lonely and hated, and lost.

She lay her small collection in the bag and snapped it shut. She adjusted the artificial arm they had hastily manufactured for her. Then she looked about the room for the last time and snuffed out the flickering lamp.

The three men were waiting for her around the rough table when she came out. A light between them cast their fluttering shadows on the walls. Their conversation had died and they sat staring at their hands or at the shadows.

Nathan rose as she entered. "Ready, Joanna?"

She nodded, and then she realized that here was the moment for which none of them had planned. It was the last time for seeing John Rodin, who would die, lonely and alone, in this land he hated with all his heart.

He rose quickly and came to her as she stood in the doorway. He shook his head wearily. "I still wonder—" he said. "I still wonder if this is right, Joanna. But when you get there take a good look at everything for me. Watch the sky and listen for the birds, and learn how it is to feel rain on your face. Lay on the grass and listen to the trees on a summer day—then you will know about Mars!"

He kissed her quickly, with a fierceness that showed the hunger and terror in his heart. Then he led her — almost pushed her towards the doorway.

Nathan shook hands quickly with Don and Rodin and then stumbled with Joanna out into the Martian night. For a moment Rodin was outlined in the feeble yellow light of the doorway, and then he slammed it against the cold.

The wind-driven sand was like crystals of ice beating against their faces. They drew the parka hoods tight and

ran, half blinded, towards the compound gates. In the laughter of this they began to lose the dread that haunted their journey. Only as they approached the gate did Nathan warn Joanna to keep silent.

They passed the barrier without a challenge. Then they stopped at the laboratory to pick up Nathan's things. On the landing area the plane was ready, its primers already glowing blue-white in the darkness.

"Thought you were never coming," the pilot growled as they climbed aboard. "Another five minutes in this hole and I would have taken off without you. Isn't fit for a dead dog out there."

The cabin was empty except for themselves. They took separate seats. Belted down, they tried to catch a short nap before the plane reached Heliopolis.

It was scarcely possible in the buffeting of the night winds, and each of them lay silent and awake. Nathan worried over the hundred details that remained ahead of them. As long as they were on Mars there was danger of Davidson waking like some sleeping giant and hounding them back to the prison.

Joanna tried to hide the fear that crawled up within her. Sheer physical fear in her first flight. Nathan had forgotten that she had never flown.

The weaving of the ship made her sick, and the vanishing of all that was familiar would not let her rest. She watched the dark night and it seemed to eat up the past as the plane flowed through it. It left her on a perilous edge of time where only an uncertain future stretched ahead of her, and the

past was a dream that could never be dreamed again.

A couple of hours later the plane settled into the long glide that brought them to Heliopolis and the combined space and airport. Far away they saw the garish lights of the city flaming against the desert. It was like a night club in Siberia, Nathan thought, but the city flourished.

They left the plane quickly, reclaiming their bags, and said goodnight to the pilot. There was a single cab waiting on the field. It took them to a cheap hotel that Nathan knew.

The clothing Joanna wore did not reveal her sex. Its thick, shapeless bulk was complete disguise, but in the hotel she threw back the hood, and they registered as Mr. and Mrs. Ord.

Perhaps some day, if there were ever suspicions about their identity, there would be investigations of Mr. and Mrs. Ord, and how they came to Heliopolis. But by that time they would be far away and hidden well from all the world.

The newness of their life together was all but forgotten that night as fatigue washed over them and they fell asleep in each other's arms.

The warming mid-day sunlight put their night journey a thousand years into the past. Nathan felt tremendous relief as they rode towards the port again, and towards the silver bullet of the spaceship which rose high above the surroundings. He began to understand the tensions that had built up through the night before and the days before it.

Joanna's eyes were shining. It was the first glimpse she'd ever had of one of the mighty ships at such close range. From childhood, she had seen them

streaking overhead in the night. She had wondered at the freedom that the monsters symbolized. She had never imagined it would be hers.

Until now.

In the elevator that lifted them to the high port above the fins she trembled with the excitement of it, and clung to Nathan like a child.

As they passed over the short ramp that led them to the interior of the ship, Nathan felt relieved. No one had approached with a rough grasp of his arm and said, "You're under arrest, Dr. Ord."

No one had pointed a finger in his face and laughed at an old fool who believed he could finish one life and begin another. No one had spoken to them at all except the steward who greeted them pleasantly and escorted them to their cabins.

Inside, with the door locked, Joanna dropped her coat and hat and sank down onto the bed. Nathan heard a small whimper of grief.

He turned her over gently and sat beside her. "You're not sorry?" he said.

"Oh, no, darling. It's just so new that it's—like a hurt. And I wish that Dad could have known what it was like to be going home. He always spoke of it as home. I wish they could all go back—"

They watched takeoff from the special observation chairs provided at the ports. The sudden increase of weight sickened Joanna, but she cried out with a final exclamation of farewell as the ship burst the atmosphere almost over the mutant colony.

The rock and the whole colony was no more than a speck, but she knew in that moment that she was leaving home.

There was a depth of sorrow in it that she knew she must never reveal to Nathan.

They came out into the stars then. The planet shrank below them and Joanna saw space for the first time. She clung to the padded edge of the observation chair like a little girl pressing her nose against a store window.

"If all this should end right now, this moment would be worth it," she murmured.

With the lessening of acceleration pressure, Nathan rose from his chair and sat beside her, his arm on her shoulder. "Don't say that until you have seen Earth in all her seasons," he said.

CHAPTER VI

WAITING

THEY SPENT NEARLY all of the two weeks in their cabin, going out but little among the other passengers on the promenade or in the dining room. In spite of herself, Joanna felt uncontrollable terror coming—for the first time—into the presence of those who had exiled her and her kind.

She felt outcast still, as if they knew instinctively her defect and her ancestry. She began to wonder if all human life was the way she saw it about her.

There were tourists and business men and women aboard, friendly to a degree, but conscious of the social necessity to dazzle each other in some respect—clothes, wit, or money.

Nathan shook his head when she asked about it. "Shipboard company sel-dom represents mankind, thank Heav-

en. You'd think this would bring out the best in all of us, instead of the worst.

"There is still a prestige in being able to travel among the stars, and men haven't gotten used to it. They creak a bit with the newness of their wings. On Earth there are plenty of people who have never been out here, people who haven't been out of the country in which they were born. Those are the ones that we will live among. Sometimes they understand the stars far better than these who travel between them to show off a new wardrobe en route.

"You'll find plenty of human beings to love."

* * *

The big liner did not go directly to Earth. Its home landing was the Moon, from which smaller ferries completed the last leg of the trip. There was disappointment for Joanna in this interruption of the flight. Nathan had neglected to tell her that it would be this way.

By the time she learned of it, the Earth was huge and green in the sky and the ship was pursuing the Moon in its orbit.

She stood watching the continents and the seas. Nathan pointed out the features of the world that was to be her home, guiding the small telescope mounted on the sill.

"It looks like the wheat country of America is getting rain," he said. "They needed it badly, and synthetics still can't replace good dark bread."

"I've never eaten anything but synthetics," said Joanna. "I wonder what real food tastes like. Do you suppose it will make me sick?"



"We'll find a country village where somebody still knows how to make real bread, and where they make butter out of cow's milk. You can get someone to teach you how, and you'll think it's the richest food in the world."

They watched the ocean then, and the turmoil of a great storm that Nathan told her was raising great white waves on the water.

She couldn't picture that in her mind. It was hard for her to imagine there was that much water in all creation.

Then they sighted the Moon rising swiftly over the curve of Earth, and the ship sped towards it.

"We'd better get the bags put out for the porter," said Nathan.

* * *

The Terminal was a frigid, sterile place. The whole ship was engulfed by it so that nothing of the lunar surface was visible. There was only the huge, impersonal vault in which even their voices seemed lost.

There was delay in the ferry connection. They stopped at the cafeteria, hoping there might be some natural food available. There was none, and

they ate the synthetic meal slowly while waiting.

It was unusual, Nathan thought. He knew that the ferries were supposed to be in constant readiness for the liners. The conversation of all the other passengers in the cafeteria and out in the Terminal waiting room seemed stilled by the strange and unexplained delay.

No announcement had been made. It was just that the ferry gates were not open. The attendants had nothing to say, merely shaking their heads when asked. There was an uncertain waiting as for some signal by which they might know the waiting mass was free to go.

And then that signal came.

And Nathan felt he had known just what it would be.

Two men approached the table and stood on either side of him and Joanna.

"You're under arrest, Dr. Ord," one of the men said. "Please come along with us and make no disturbance."

They rose from the table like dreamers, not yet awake, and were guided firmly along towards an office at one side of the vaulted Terminal.

He ought to have known, Nathan thought. Forty-five years of brutal experience should have taught him that they didn't have a chance. He was not living in a world where dreams came true.

But it would be worse for Joanna. She had *seen* Earth, now, and had to live forever with the knowledge that it could never be hers.

They sat on chairs in the crowded office of one of the executives of the space line. He was a gray-haired, prim-faced man who looked at them accusingly from across the polished desk, as if they should be ashamed of making

such a disturbance for him.

There were others, too, strangers who made no bother to remove their hats.

It was one of these that spoke. "We received word from Administrator Davidson at the mutant colony that you aided the escape of one of the mutants, Joanna Rodin. I assume that this is Miss Rodin with you. Do you have anything to say to these charges?"

Nathan shook his head wearily. "No—I have nothing to say, except that she is not Miss Rodin. She is Mrs. Ord, my wife—and she is not a mutant."

The questioner pursed his lips in exasperation. "All right, you can have trial on the full charges, if you wish. It would be a lot easier if you would just do things the nice way."

"I am the former Miss Rodin," Joanna said, speaking for the first time. "I was born in the mutant colony. I presume I am the one you want."

"You're a mutant—?"

She reached for the hidden fastenings on the artificial arm and released them. Silently, she laid the arm on the desk in front of her.

The gray haired executive shrank in distaste. A shocked silence pervaded the room as if she had suddenly stripped off her clothes in front of them, a mixture of pity and disgust.

"I will return to the colony with you," she said. "But don't punish my husband for our foolishness. He is a great man and the whole world needs him too badly for that."

"We have nothing to say about that," said the officer. "We only work here. You will return to Mars on the next ship, Dr. Ord, it will be necessary for you to stand trial on Earth."

Nathan looked straight ahead, star-

ing between the figures of the men. His fingers toyed with a miniature rocket paper-weight on the polished desk.

"You think I'm lying, don't you?" he said. "Joanna is no mutant. She is cured. Although her parents were mutants and she has a withered arm because of it, there is no mutation within her. Her genes can be passed on for a hundred generations and remain clean of any defect she might possess.

"You know who I am. You know my work, my reputation. You know that I'm not lying when I say that I have done this for her. Why can't you let us go?"

"I'm not saying that I don't believe you," the officer replied.

Somehow, Nathan sensed that the eyes of all of them were on Joanna now. He turned his head slowly. His throat ached at the sight of her. For just a moment he couldn't define what he saw, and then he knew. Of them all she was the only one that was unafraid.

His eyes dwelt again upon the black contour of the hair that sheathed her head, the warmth and tenderness of her eyes, the strong, graceful maturity of her figure so erect now before the onslaught of these officers of a law she never made and had never been asked to uphold. A law to which she could only submit.

"We don't make the rules," the officer was saying. "And the law doesn't say anything about genes. It only says that mutants have to be exiled to Mars. There's nothing we can do. I'm sorry. You can have a few moments alone, if you like—"

Nathan looked directly into his eyes for the first time. He smiled. "I think we shall have much more time than

that. I shall go back to Mars with her."

"I'm afraid your Chief wouldn't be likely to recommend that you hold your job there again, and I'm sure you won't be allowed to serve a prison term out there."

"You don't understand. You can't take us apart. You see, I happen to be one of them. The law says that I have to go to the colony, too."

"Nathan!"

Joanna's cry was of sudden pain as if he'd slashed through all her defenses.

"Oh, Nathan—you shouldn't. They would never have known. You had no need to tell. I'm not worth that much to you."

The officer was confused. He looked from one to the other. "I don't understand. Are you saying, Dr. Ord, that you have been a mutant masquerading as a normal all your life?"

Nathan nodded.

The officer tipped his hat backward and stood looking at them with his hands on his hips. "I'm glad," he said at last. "I'm kinda glad—for you both."

* * *

It was on the way to the room where they were to be held in custody that the same officer handed them a message in an opened yellow envelope.

"This came for you. Unfortunately, we had to open it, since it pertained to a wanted case. You may know that it didn't help us in any way, if that will make it easier for you. We'd have caught you anyway."

They went into the room alone and sat down on the bed. Utter weariness filled Nathan with a longing to sleep and forget, but he unfolded the sheet inside the envelope. It was from Don. It read:

Nathan, I hope this reaches you in time. Rodin went to Davidson the day you left and reported what you had done. I don't know why the crazy fool did it. He wouldn't say anything except that he had been wrong and that you both belonged here. He said nothing could come of hiding all the rest of your lives.

There was not a thing I could do. Rodin sent me away, refusing to involve me, but I still can't help you. I hope that there may be some way out for you.—Don.

Nathan and Joanna finished the message together. For an instant Nathan felt sickening rage towards the old man who had thwarted them with such meaningless betrayal.

While they sat there they heard the faint throbbing that went through the Terminal as a ferry took off for home.

He and Joanna could have been on it. They could have been on the final leg of their journey to Earth!

If they hadn't been betrayed by a crazy old man.

Then Nathan saw the look in Joanna's eyes. There was an understanding there that baffled him and added to his anger, but there was pleading, too, for him to understand.

"Don't you see what it would have been like?" she said softly. "We would have grown to hate each other. There would have been no peace. They would have set out to hunt us and never given up.

"All our lives we would have waited for this moment. It wouldn't have worked. I'm only sorry for what I've done to you—"

No — it wouldn't have worked, he

saw. It would never have worked out for her. Maybe for him, but not for Joanna. There could have been no freedom on Earth for her. Only on Mars. He felt a strange sense of relief.

He wondered about Rodin's motives. Why had he done it? Was it out of revenge or out of longing for Joanna? And why had he let them get this far in the first place?

He thought of what Don had sent in his message:—*you both belonged here—*

That was surely the simple truth, he thought. He belonged with the rest of his people in exile. He had done his work. There was a way out now for unborn mutant millions. Some day the colony would be dead and gone. It didn't matter that it would not be soon.

Joanna was still watching his face and he drew her close to him. He understood the thing that Rodin had done. Rodin despised him for quitting when only half his life was over, but he'd been willing to see them go for Joanna's sake. Then he weakened and forced them to come back—back where they belonged.

The colony needed a strong man to lead it when he was gone, John Rodin had said. Perhaps *he* could be that man, Nathan thought. The mutants had to be taught to lift up their eyes like men again. Someone inside, someone who was one of them, and still possessed the hope which they had all abandoned had to do it for them. That was a goal worth all the rest of his years.

Don could treat Nathan and the others. And some day he would go back to Earth, and he would carry the news of normal children being born in the
(please turn to page 44)

SKAG WITH THE QUEER HEAD

by MURRAY LEINSTER

... OR WAS IT, SKAG MIGHT HAVE ASKED,
THE PROFESSOR WHO HAD THE QUEER HEAD ...
FEATURE-LENGTH NOVELET!



Deena's jaws flashed shut
on the extended wrist.

CHAPTER I

WHEN DEENA HAD her puppies, she was attended by no less eminent a person than Dr. B. J. Danil, late Warton Professor of Experimental Biology at Braddock University. For Deena was no ordinary dog. Neither she nor her

mate, Skag. They were the only dogs of their kind, in fact, in the whole world.

The time of the event was the middle of an Alaskan winter, with the temperature thirty-odd degrees below zero. The place was the kennel Deena shared with Skag behind Professor Danil's

quite improbable dwelling up the Chinook River, sixty miles above Duggan's Landing and the same distance from any other human habitation.

When it was all over, Professor Danil let Skag into the high wire enclosure. Skag looked carefully at the professor's hands and went composedly to the kennel door. He poked his blunt nose into the doorway thrusting aside the hanging flap of canvas. Skag and Deena had large, odd heads. They made noises to each other which were not growls or whines or barks, and there seemed to be understanding between them. Skag turned his head and looked at Professor Danil with an air of careful estimate, and then he lay down in the snow outside the kennel, keeping his eyes steadily on the man.

Professor Danil laughed shortly.

"No?" he asked mockingly. "No? We shall see! A very promising litter, Skag! You and Deena were good material. There should be more good material in your offspring. We shall see!"

The dog gave no sign. He lay still in the snow, watching. Professor Danil laughed again and went out of the kennel enclosure, locking the wire gate behind him. He went to his own house and let himself in.

It was an unlikely place for any human to exist, sixty miles above Duggan's Landing on the Chinook. There were double windows of glass, and wooden floors. The furniture and books had been brought in from Outside and floated up the river on the same flatboat that brought the sections of the house to be assembled here. Professor Danil stamped off his boots and slipped out of his parka. He had gone from thirty-odd below zero to a practically tropical

seventy above, and from an environment of utter Arctic savagery outside to one that was fantastically luxurious.

The interior of the house would have been accepted as adequate even among the faculty of Braddock University, from which Professor Danil had departed some two hours before his resignation was demanded by an outraged faculty council, just three hours after a flaring front-page article about his experimental methods had appeared in the local newspaper, and about twenty minutes before men from the District Attorney's office arrived to ask pointed and embarrassing questions. Here, in the wilderness, there was no one to demand his resignation from anything, or to criticize his methods of scientific research. He had worked, here, without interference. There were rows of bulging notebooks above the desk in his living-room. There were rows of specimen-jars above his apparatus in the room he used as a laboratory. For four years he had labored with his own peculiar kind of zest, for the scientific results whose importance nobody could deny. But the rest of the world didn't like the way he got them.

Now he rubbed his hands and blinked satisfiedly. He went into his modern bathroom and washed. When he came out he went to his desk and took up his latest, only half-filled notebook. He made a neat entry.

"Deena had her puppies today. She understood that I was helping her and was most cooperative. Skag understood, too. I must give him another intelligence-test. It is apparent that the faculty of learning is the faculty of integration, and that the faculty of integra-

tion is capable of crossing the borderline into reason. Skag reasons. He looked carefully at my hands to be sure that I was not carrying away any of his puppies. That indicates memory, reflection, and foresight. I am quite sure that he knows exactly what happened to the puppies in Deena's first litter and that he anticipates what may happen to these.

"Note; of the litter, four especially seem well adapted to development. However, I shall allow them to gain more strength before I begin . . ."

While he wrote, out in the kennel, Deena licked and caressed her puppies with a lavish affection. They squirmed and whimpered blindly about her.

Presently Professor Danil put the notebook away and went into his laboratory. There was nothing to do there—yet—but he looked with satisfaction upon the specimen-jars. There was one series of seven that he examined with especial contentment. Each was very neatly, very precisely labeled with exact data. Two of the specimens had almost survived, and those two would have had heads like Deena and Skag, if they had lived.

Professor Danil rubbed his hands. He went to the kitchen and prepared a hearty meal. Afterward he meticulously washed and dried all his implements. Then he read comfortably for an hour or more. Just before sundown he put on his out-door clothing and went out to the kennel again. Skag got up rather stiffly from his post outside the kennel door and stood aside while Professor Danil went in to examine the puppies and Deena.

With a sort of malicious glee, Pro-

fessor Danil pretended to have something hidden under his parka when he came out of the kennel. Skag bristled. He moved quickly to be between his master and the locked gate of the kennel-yard. He eyed the man steadily. Professor Danil walked toward the gate. Skag did not move out of his way. His gaze became strangely calculating.

With a sudden sharp intake of breath, Professor Danil stopped short. Skag with the queer head crouched.

"You fool!" snarled Professor Danil, in sudden fury. "I'm not taking your pups! Look!"

He abandoned the pretense of carrying a hidden something. He made it plain that he carried nothing at all. But Skag eyed him as steadily as before. He made those queer noises that were neither barks nor whines nor yelps. Other sounds came from the kennel.

Skag moved quietly aside. He walked stiff-legged back to the door of the kennel, and lay down before it.

Professor Danil unlocked the gate. Outside, he swore suddenly. He shook his fist at the big dog who lay on guard before the kennel.

"Smart, eh?" he raged. "You know I don't want to kill you because you're my best specimen! But don't think you can disobey me! I can duplicate you now! And after this I'll have a gun to kill you with!"

The dog gave no sign. The man went back to the house, muttering. But after he was inside once more, he chuckled suddenly. He went again to his notebook and wrote down an exact account of Skag's actions. He gave full details, adding his own interpretation of the noises Skag had made, and to which Deena had replied.

"They communicate," wrote Professor Danil. "Not in words, of course, because it is unthinkable that in their life-span they could have built up a vocabulary. That would be the work of many generations. Skag, apparently, expressed a generalized anxiety, and Deena replied by a generalized expression of satisfaction. If it were not for the imbecility of the public, and the stupidity of my sheep-like confreres in experimental biology, I would be able to have an assistant at work studying the sounds they make. It would throw a most valuable light on the origins of human speech . . ."

CHAPTER II

THERE WAS A winter storm, and after it a period of cold so intense that it seemed starkly impossible. The inner of the double windows of the cabin frosted over. The scientist knew that the mercury would stand at forty below zero or less—how much less he could not estimate. He could simply have taken a thermometer outdoors, but Professor Danil was a specialist. Experimental biology was his line, and the mutation he considered responsible for human intelligence was his specialty. His own technic for producing an equivalent mutation in experimental animals was his life passion. He made everything ready for the work he was to do, but it had really been ready before the puppies were born.

He wrote exact and elaborate memoranda of the prospective method of the results he anticipated, of the theory

back of each intended move. He referred constantly to his book, "*The Decisive Mutation, the Origin of Homo Sapiens*." His experiments were to prove the hypothesis he had advanced in that work, which the scientific world had accepted with only tepid interest because it could be only speculation.

During the worst of the more-than-bitter cold, Professor Danil stayed within his cabin-laboratory, venturing out no more often than once a day to feed the two grown dogs in the kennel-enclosure, and to observe the growth of the pups. He wrote up his notes. He rephrased them. He perfected them. In particular, he devoted pages of his fine handwriting to an impassioned and vehement defense of his methods. The results his operations were intended to produce required operative shock as an aid to surgery. In short, anaesthetics could not be used. The fact that the dogs must suffer pain was an essential to the success of the experiment! He waxed savagely witty at the expense of his detractors. But he grew restless; eager to get about the work which would prove him the one man of the twentieth century who had produced an entirely new scientific research procedure.

"I consider," he wrote, "*that the mutation which made man a thinking animal was one which caused him to retain all his life the foetal skull-shape which all other primates possess at some stage of their development, but out-grow. It is perhaps the stage in which instinctive knowledge is developed or implanted in the individual. It is the stage which puppies are leaving at birth. It is the stage when the conformation of the brain is adapted to learn-*

ing and integration.

"A young animal, retaining some vestiges of this conformation, is capable of learning. An old or mature animal, having acquired the mature skull-shape of his species, is no longer readily able to integrate new experiences with past ones.

"Deena and Skag, in whom I have been able to preserve the skull-shape of very young dogs, have intelligence I estimate as equal at least to that of a ten-year-old human child. If I am able to preserve the same skull-shape in some of their offspring, the result in effective intelligence should be even greater. After all, in teaching Skag and Deena, I was able to pass on their acquired thought-processes to their off-spring in a more easily acquired form.

"I look for much more effective intelligence in the second generation. If I were able to produce an actual, inheritable mutation, instead of of an artificial one which is not inherited, the race of reasoning dogs I could produce would probably develop a typical canine culture, different from that of homo sapiens, but not necessarily inferior . . ."

One day in so many Professor Danil spent in the chores essential to life in the wilds. He had mail and supplies brought to him in the two or three annual contacts he had with the rest of humanity, but there was much he had to do himself. A whiskery Alaskan sourdough Joe Timmins brought up the winter's accumulated mail and scientific magazines just after the ice broke. He took away Professor Danil's list of needed supplies. He brought up those supplies before freeze-up with the sum-

mer's accumulation of mail and learned periodicals.

Perhaps once or twice during the summer, and sometimes once during the winter, some other person might stop at the cabin. But few stopped a second time. Professor Danil was not an amiable person and he was infinitely scornful of his intellectual inferiors. He needed no human society. He made it plain that he wanted none.

Even Joe Timmins camped by the river-shore when he brought up supplies. To avoid the need for contacts with other inferior persons, Professor Danil had become self-sufficient even to the extent of chopping his own wood, though even a doubly-insulated arctic house like his called for much fuel.

One day in four or five, he chopped wood. Another day in the same period he sawed. He knew that when his work with the puppies began, he'd not have much time to spare, so he must lay in an adequate supply of firewood ahead of time. But he became extremely impatient.

"It is irritating," he wrote in his notebook, "that I cannot begin work while the puppies are younger. Obviously, the earlier I begin, the earlier I can arrest the change toward the adult, non-learning skull-shape. The more infantile the final skull, the greater the receptivity of the final mind, and consequently the greater the intelligence. . . . But the necessity of trauma for satisfactory results requires a reserve of ability to resist surgical shock. . . ."

Surgical shock, in part, means pain.

A second storm struck. There would have been no more than three hours of daylight now, anyhow, but while the storm raged there was no difference be-

tween dark arctic night and pale arctic day. A wind blew with such violence that Danil remained indoors. Twice in two days he struggled out to the kennel to feed the dogs. On the third day he essayed to carry one of the pups back to the cabin with him. Impatience to begin work moved him. He did not think the puppy would survive more than the first day's treatment, but even so he might learn some details that would be helpful with the others. . . .

When he reached for the puppy, Deena uttered a cry that was something between a bark and a snarl. Professor Danil grinned mirthlessly at her. He drew back, but only for an instant.

"After all," he said, "I made you, Deena! I'll do with your pups as I please!"

His left hand moved to a pocket in his parka. He reached out again with his right.

Deena's jaws flashed shut on the extended wrist. She held fast, making raging sounds, but somehow not crushing the hand. Professor Danil went into a cold, furious rage. Such tantrums had spoiled many experiments in the past, but he could not control them. When he, who felt so infinitely superior to the rest of the human race, was defied by an animal—and one essentially of his own creation!—he became fury incarnate. His left hand snatched out a pistol with which to kill Deena.

Then he choked as Skag's jaws closed on that wrist. Skag was in the kennel. He'd darted in through the hanging canvas flap at Deena's outcry. And silently, he'd waited until the pistol came out. Now his jaws held the wrist which held the gun.

Skag had been a Malemute puppy,

and he had a Malemute husky's hundred-pound frame—despite his queer head—and he was a match for any man in fair fight. He could have crushed the wrist-bones in his jaws with a single savage pressure.

But he waited. His eyes rolled upward and he regarded the man, but he held the wrist fast. Deena held to her own grip. She snarled a little—and Skag answered. But he did not release Professor Danil's wrist.

The unreasoning anger left the scientist utterly. In a sudden horrible instant he saw his situation. He was sixty miles from the nearest human contact. Two huge dogs held him helpless.

CHAPTER III

FOR SECONDS THE tableau remained unchanged. Skag did not snarl or growl. He gripped the wrist behind the hand with the pistol. His eyes were fixed on the man's face. They were intelligent as no ordinary dog's eyes are intelligent. And they were grim. Outside, the storm-wind blew, screaming among the barren trees left about the cabin. There was blinding, abrasive snow in that wind. There was a penetrating, horrible chill that could freeze the very marrow of a man's bones if he were unsheltered and merely kept still.

Sweat started out on the man's face despite the ghastly cold. He spoke harshly:

"Let go, Skag! Deena, let go!"

Skag's eyes remained fixed on him. Deena made a querulous sound which was plainly another of those noises by which the two animals communicated.

Skag growled softly. Staring steadily up at the man, he pressed ever so slightly more upon the pistol-holding wrist. He shook it gently.

Danil cursed. Without the pistol he would be defenseless. But he was defenseless now. They had only to crunch down upon their present grip, and he would be essentially handless, unable to help himself or feed himself or survive even one day in this frozen wilderness.

Skag growled a little. He knew what the pistol was. He'd seen Danil kill other dogs with it—failures in his experiments. He was demanding that Danil drop the weapon.

Danil's voice grew shrill. He commanded hysterically. He ordered frantically. He raged. But he dared not pull trigger, and he dared not let go of the pistol.

Feeling—all sensation—slowly left his left hand from the pressure on its wrist. Despairing panic filled Danil, with such hatred and fury as no man ought ever to know. Skag and Deena were dogs with queer heads. He had performed operation after operation upon them while they were puppies, applying his unequalled skill with a zealous ruthlessness. He had discovered that developmental changes begin in isolated tissues, and spread. He had extirpated each focus of change. He had made these dogs intelligent. They were his creations. But they were still only dogs—animals! For them to dare to hold him at their mercy—to dare to hate him—Danil would have gone mad with rage had he not been practically mad with terror:

Deena quivered with her hatred of him. Over and over again she made

that querulous sound which must have been a demand that Skag let her crunch her strong jaws home. Each time Skag growled faintly.

Suddenly he shook his head impatiently. Danil cried out in pain as the dog's teeth wrenched his arm. The pistol dropped from his numbed fingers.

Instantly Skag released him. He deliberately picked up the pistol in his jaws, carried it to the side of the kennel, and then stood over it. He regarded the man steadily, though his eyes burned.

Danil fled.

Back in the cabin, it was an hour before he could review the situation calmly. Then it was another hour before he had determined on his course of action. He made his notes.

"Skag and Deena," he wrote, "*very evidently understand that I permitted them to mate because I intend their puppies for experimental purposes. The fact that Deena's first litter was used in this way has plainly made a strong impression. They do seem resolved that this litter shall not be similarly used. The fact that they have the intelligence I gave them complicates the matter.*"

"*I expect to use them to instruct those of their pups who may survive the developmental operations, so I cannot afford to kill them. But I shall have to make them unable to defy me. The situation seems to call for a drug in their food which will make them helpless, and then some operation to make them incapable of defying me.*"

"*I shall have to debate the method by which I can leave them capable of caring for those of their young who survive, without any power to injure me. They must have the power to feed them-*"

selves and to walk to some extent. . . ."

He wrote on, zestfully, making the notes which some day would force the scientific world to recognize his genius.

Outside, the arctic storm howled and raged. There was blinding snow and screaming wind and numbing cold. But Skag and Deena, in the kennel within the high wire fence which no dog could leap or climb, Skag and Deena made noises to each other. Skag picked up the pistol in his jaws and went out into the storm.

He dug a hole in the snow, where it had drifted deep against and through the wire-mesh fencing. He dropped in the pistol and covered it. The storm erased all traces of his digging, almost instantly. He went back to the kennel. Deena was in the act of licking her puppies over from head to foot in lavish adoration. Skag made gruff noises. She got up and poked out her nose beyond the canvas door-flap. She whined anxiously. Skag made more noises.

Obediently, Deena picked up one of the puppies in her mouth. It dangled and squirmed ludicrously in puppy-helplessness, held by the loose skin at the back of its neck. Skag picked his way carefully among the other sprawling small bodies. He picked up a second puppy.

Next day, when the winter sun rose for the brief period of daylight—but made only a grey half-light beneath the storm-clouds—Professor Danil came to the kennel-gate and called harshly. There was no movement in response. Danil had the dogs' food ready for

feeding. It was suitably medicated. He called again. The kennel was still. There were no tracks on the windswept snow.

He put down the platter of food and went back to the cabin. He came back with a rifle in his hand. Very cautiously, he unlocked the gate and entered the kennel-yard. With the rifle cocked, he approached the kennel in which the two dogs and their pups should be.

It was empty. The dogs and their pups were gone. In his fury, it was minutes before Professor Danil realized that drifted snow had piled up against and through the wire fence until a resolute dog could leap the balance of the distance, both to go out and to return.

When he did realize it, the man gazed about him. He went back to the cabin, and soon came out prepared for a journey. He set out savagely on snowshoes to look for tracks of his missing animals. With their young to carry, one at a time, Skag and Deena could not have gone far. And Skag would have to hunt food for them.

Professor Danil planned his course of action. If necessary, he would kill both the grown dogs. They had defied him. But he would rather not. If only he could wound them so they could be captured, or if he could trap them, or—best of all, if he could come upon their den when both the grown dogs were absent and get back to the cabin with the pups. . . .

That would be best. Because Skag and Deena had the intelligence of many human adults. They were admirable parents. If their puppies were in Danil's power, they would submit themselves abjectly to him.

CHAPTER IV

ON THE SECOND day, he found Skag's tracks in the snow. He followed them, coddling his anger. He backtracked Skag toward the place from which he had come, which would be where Deena and the puppies were. In soft deep snow the trail was clear. He followed it for four miles. Then suddenly, behind him, there was an outcry and there was enormous urgency in it.

Danil turned, swearing. He moved toward the sound, confident in his weapon. He came upon fresh tracks. Skag had — this became clear later — gone near the cabin to scout his master's activities. He trailed and found Danil back-trailing to the den. He ran desperately to overtake him. And a hundred yards short of his master, he made that extraordinary noise.

But Danil did not understand this at first. Cursing, now that Skag knew his whereabouts, he pursued the dog savagely. Over and over again he read in the snow where Skag had gone on a few hundred yards, or half a mile or so, and then stopped to watch and listen and sniff to see if his master still followed.

It was not until darkness drew near that an infuriating suspicion came to Danil. He stopped short and cursed, and then headed back toward the spot where Skag had first discovered him. He doggedly went back to tracing the old, original set of Skag's footprints. And a bare quarter-mile from where Skag had lured him aside, he found where Skag and Deena had denned. *Had* denned. The place was empty now. There was the heavy trail of many, repeated journeyings away from it. Deena

had been warned of danger by Skag's outcry. While Danil followed the male dog, Deena had shifted her puppies to a new hiding-place.

The trail was plain, but it led away into gathering darkness. And as Danil took the first furious step to follow, he heard a low, throaty growl from somewhere unseen. Skag warned him, Skag defied him. Skag dared him to try to trail through the blackness of an arctic night.

Danil went back to his cabin. As he went, he raged—and listened fearfully.

Yet, when he was safely back at his cabin, he opened the door to the dark interior and closed it again — and crouched down before the door without. A long time later he saw a vague form moving cautiously nearer to the cabin. The form watched, and listened, and advanced a step, and watched. . . .

Danil waited. But Skag — if it was Skag—did not come too near. After a long time he started to move silently away again. Danil aimed his rifle at an indistinct target, with cold-stiffened hands which trembled. He emptied the rifle's magazine at that moving blur against the snow. It vanished at break-neck speed.

Inside the cabin, though, Danil wrote his notes with a neat blend of scientific self-satisfaction and anger.

"There is no question about the grade of his intelligence. He lured me away from his den, which I would have found in a quarter of an hour more. He threatened me when I had thought of trying to trail Deena to the new den in the dark. It would have been highly dangerous, as I see now. Then he followed me back to the cabin to make sure I made no further attempts

tonight against Deena and his pups.

"I am convinced that he did not approach the cabin more closely because he saw that I had made no light inside. Now that I have shot at him, he knows of his danger. With the brain-power he has displayed, it becomes more and more probable that I will have to kill him if I cannot disable him beyond any power to harm me. But more than ever I see that this litter of pups, containing his and Deena's potentialities, should be the means by which my theories can be proven even over the objections of fools and imbeciles to my methods. Skag does reason! But—"

Here Danil's handwriting changed from the neat and even penmanship of one writing a scientific memorandum to the savage scrawl of a man in a passion—*"but that same intelligence I created in him will make him learn what it means to defy me!"*

Danil was a very vain man. He paced up and down his cabin that night, working himself up into a corrosive fury. He had been lured away from absolute success—the capture or the maiming of Deena and the securing of her pups. Skag had made a fool of him! Skag had mocked him! And Skag had dared to threaten him! Skag—

Next morning Danil set out very grimly for a showdown. He made his way to the den he had found at sunset the night before. There was the broad trail where Deena had carried away the pups while Skag coaxed Danil into futile pursuit. It was hopeless for the dogs to try to hide their trail in snow like this.

Inside the den—a hollow place in a huge, still-standing tree—there were scraps of tiny bones and bits of rabbit-

fur. The dogs had hunted for food in the days since they had fled from their kennel. They had devised some way to catch snowshoe rabbits. They had been prudent and foresighted parents.

Solicitous parenthood and intelligence always go together, though, in all the animal world. With the brain-power of at least ten-year-old humans, coupled with the fierce emotions of maturity, Skag and Deena would be anxious parents indeed. Of course they intended fiercely to keep their offspring, from being made into such as they were—dogs with queer heads and vast intelligence, and a memory of months of screaming torment as the price. But the point was that, with their intelligence, they must be desperately anxious about Danil's unending pursuit. If they could be captured without being killed.

Danil muttered satisfactorily to himself as he plodded over the snow. He would make cages for them. He would put them in the laboratory where they could see and smell and hear all the process that would make their puppies like themselves. When it was over, he might have to kill them, but before that they would learn who was the master!

With his rifle ready, he moved onward from the den. He followed the trail that darkness and Skag, together, had forbidden him to follow the night before.

And it led to the smooth, windswept ice of the river. He spent all the rest of daylight trying to find where they had left the trackless ice. He saw no sign of them before the early darkness made further search impossible.

But he saw signs at his cabin, when he got back. Skag had gone boldly to

it, secure in the knowledge of Danil's absence. He had worked at the fastening of the door with his mouth until he managed to open it. He entered the cabin, which now was bitter cold. And — it must have been that he hadn't dared spend time in hunting with Danil so furiously on his trail—he carried off a huge side of bacon for his family. There was much more food in cans, but the opening of cans would be beyond the two dogs.

At first, Danil merely groaned in a black fury at the insolence of it. But then, suddenly, he grinned. He rubbed his hands exuberantly together. He laughed a little, zestfully. It was a very, very unpleasant sort of laughter.

While a sullen new snowstorm began outside and filled the night with drifting, twisting, falling flakes of white, Professor Danil set to work happily to prove his superiority to the dogs he had created. He got out bear-traps which he had never before used, and which neither Skag nor Deena could imagine to exist. He prepared them lovingly for use. His notes, when he wrote them, were precise and zestful. He even put down in detail his intentions for the future. Danil was not an amiable man.

Out in the darkness the snow fell and wiped out all past trails, and drove all small animals to hiding. And somewhere away in the bare-branched forest, Deena nosed her small puppies proudly so that they tumbled about her in the new den that Skag had found for them. Skag squatted by the entrance. Sometimes he blinked out at the falling snow. Sometimes he turned his head toward his family, safe in a hollow log. Sometimes he made those queer sounds

which only he and Deena among all dogs ever seemed to use. They were not quite words. They were neither barks nor yelps nor whines. But they were some sort of communication.

CHAPTER V

THE SNOW FELL steadily for four days, and Danil viewed this with contentment. While it snowed, hunting would be poor indeed. Skag and Deena would go hungry. The puppies would be half-starved. Skag — having intelligence equal to those of many men—would become desperate for his mate and offspring.

On the fifth day, the snow ceased. Danil went out-of-doors. He set out on snowshoes, rifle in hand. His purpose was to search for tracks which would lead him to the hiding-place of Deena and the puppies. He had no expectation of finding them easily. He suspected that somehow Skag had gotten his family hidden so that it would take days of search to find them. But he would find them, in time!

Today, he actually left his cabin so that Skag would repeat his raid of nearly a week ago. Skag had remembered how the man opened the door. Skag had stood on his hind legs and pulled the latch-string—Danil had abandoned locks; if they were not oiled they stuck, and if they were oiled they froze—and Skag entered—for food. He would see that Danil was not at home today. He would try to repeat his raid . . .

Danil grinned to himself as he trudged through the thin woodland on his almost circular woods-type snow-

shoes. He was wary, of course. His rifle was ready. But he knew that Skag understood firearms, as the incident of the pistol had proved. Danil had no fear of attack as long as he had his rifle, but he did not really expect to see any trace of the dogs until his return to the cabin. Then, he believed, he would find Skag blood-smeared and raging and desperate, caught in the bear-traps that waited for him inside the cabin door. Perhaps Deena would be there too, whimpering and frantic, trying crazily to help him get free. And Danil . . .

Danil enjoyed in anticipation what would follow his return. He might shoot Deena, delicately, so that she could not get away. In any case he would secure her. He would leave Skag in the traps while he backtrailed Deena and found the pups. And then, afterward . . .

Danil did not even think seriously of the finding of the new den today. So of course he found it.

Only three miles from his cabin he blundered on the tracks. He did not even need to follow them any considerable distance. A quarter of a mile, almost straight toward the river-shore, and then he saw where they led. Plainly, unmistakably, into the hollow of a great dead-fall. He threw off the safety of his rifle. He was happily confident. He advanced with the rifle ready.

"Skag!" he snapped. "Deena! Come out!"

With a sudden shock of ironic satisfaction, he realized that the dogs' intelligence might lead to the most zestful possible conclusion to this whole affair. They — and only they — would understand the menace of the rifle as well as a human being would do. They

—and only they—would realize that with the rifle bearing down upon them, disobedience would mean bullets. Skag and Deena, alone of all dogs because of their queer heads, would be susceptible to capture by the threat of shooting, as men and women would have been in their case.

Danil wanted to laugh triumphantly, but instead he snarled;

"Come out of there or I shoot!"

There was a puppy-whimpering in the hollow tree. Then a stirring. Then Deena came out. She faced him with blazing eyes. She did not try to run away — that would have been desertion of her puppies. She did not try to rush him. She knew that would mean death. She stood there, terribly and despairfully defiant.

"Yes?" said Danil mockingly. He never knew how many human words the dogs understood, but it was many. He'd talked to them often for the satisfaction of hearing his own voice. "You know how it is, eh? You run, I shoot. You rush, I shoot. Either way I take your puppies and make them smart dogs like you and Skag—but a damned sight more obedient! When I'm through with them they won't dare to run away like you did!"

He did laugh. By now, he was sure, Skag was a raging prisoner in the bear-traps inside the cabin door. Deena — on three legs she might run away, but not on two — disable her. Take the pups and put them in the cabin, make sure Skag was suitably helpless and knew of his master's final triumph, and then come back for Deena so that she could care for and instruct such of the puppies as survived the operations that should make them Deena's own kind.

He brought the rifle up to bear. As its muzzle lined up with her body, she broke out in a screaming outcry of hatred and defiance. It was indescribable and unearthly. It—

Something huge and silent and terrible struck Danil. It tumbled him from his feet. It was Skag, monstrous and deadly. He made no sound at all. He struck with the full weight of his body, flung in so desperate a leap that as Danil fell sprawling, Skag tore free with fragments of Danil's parka in his jaws.

The scientist started up, his mouth parted in something that started to be a scream, but became a wheezing gasp instead. Because Deena and Skag, together, sprang once more — but they sprang together at the rifle that had been knocked from Danil's hands. They both got it. Then Skag released it. He made sounds.

Deena went bounding away over the snow, dragging the rifle behind her. Skag moved stiffly to the mouth of the hollow tree from which tiny scufflings and puppy-whinings came. He stood there, tense and trembling. After a moment a low growl came from his throat. His eyes were not a dog's eyes. They were stern eyes, grim eyes, with intelligence behind them, and they looked at Danil with a burning steadiness that was more terrifying than any snarling could have been.

Danil, gasping, tried to back away. But it was not easy to walk backward on even rounded woods-snowshoes. Then Deena came back. The rifle was gone. And Deena was a female. At sight of Danil her lips drew back and her eyes blazed. He had threatened her pups. She swerved toward him, snarling.

Danil screamed. Flight was impossible. He climbed a tree with startling agility, practically gibbering in his terror. Deena raged uncontrollably about the base of it, though Skag only looked up with those grim and burning eyes. They knew that, Danil was unarmed, now. He was safe, but he was unarmed.

Once he was sure they could not reach him, Danil screamed curses at them. His vanity was irreparably injured. He was Professor B. H. Danil, late of Braddock University. He was a great man, a superior man, infinitely above other humans, and they only dogs. He raged at them with the venom and fury possible only to a vain man whose ego had been deflated.

But he stayed up the tree. He expected them to take their pups and move away again, out of some residual fear of him. But they had no fear of him now. They knew he had no gun. And this was their home. There was no reason for them to move.

After an hour, he grew very quiet. He hoped they would forget about him. Then perhaps he could slip down and away when both grown animals went to hunt. But they did not forget. Skag lay in the entrance of the hollow dead-fall which housed his family. From time to time he raised his eyes to the man in the tree.

That was all. At nightfall, Danil still hoped. But it grew colder at night. He could not exercise to keep warm, because the branches on which he rested were coated with ice. He could only cling to the tree.

Once during the long dark hours the dogs heard querulous, moaning noises up in the tree, as if Professor Danil wept hopelessly to himself be-

cause he did not dare come down and because the cold ate ever deeper into the marrow of his bones.

That was not many hours after darkness fell. When the gray light came again he was still up in the tree. But he did not move.

CHAPTER VI

WHEN THE ICE broke, that spring Joe Timmins came upriver with Professor Danil's spring mail. Joe Timmins was a whiskery, sourdough Alaskan. There was no sign of life about the house. He shouted, and then he opened the heavy cabin door. He stared blankly at the sight of beartraps with gaping jaws, set to catch any living creature who might enter. He swore, and first sprang them with sticks. Then he went gingerly through the cabin. Professor Danil had not been there for a long time.

When he went outdoors, he saw a dog with a queer head looking at him. It came up and wagged its tail.

"Hi, Skag!" said Joe Timmins. "Where the hell's your master?"

Skag came forward in friendly fashion. He had seen Joe Timmins several times before, and the man was kindly. Skag remembered. He remembered everything. He stayed companionably with Joe Timmins while the sourdough sought for some indication of where he should send word that Professor Danil had vanished from the cabin in which he spent his winters alone. But Skag was bored when Timmins began to look through the notebooks. He trotted away,

Timmins read cursorily, skipping here and there. He was looking for an address to write to. But suddenly, what he read began to have meaning. He happened to have chosen the last notebook of all, concerning Skag and Deena. He screwed up his face. Later he rumbled furiously as he read.

When he finished, he was breathing hard. He went out, and Skag was nowhere to be seen. Joe Timmins moved rather grimly in the direction toward which Skag had vanished. He found a clear trail, alternately in slushy snow and soft mud. It was a well-used trail—by dogs. Joe Timmins followed it three miles.

Then Skag came to greet him, wagging his tail. Deena looked at him suspiciously from the mouth of a fallen hollow tree. A small pack of gangling, boisterous half-grown pups came sniffing cautiously at the man. Skag made sounds, and they wagged their tails. Joe Timmins found it incredible, but he had read all about it in Professor Danil's notebook.

"Look here!" said Joe Timmins wrathfully. "Those books say you got as much sense as a man. But it looks to me like you killed that fella Danil—even if he did need killin'!"

Then he stopped helplessly. A man does talk to a dog. But Joe Timmins had talked as to a man. He was embarrassed.

Deena made noises. Skag blinked idly, and then his eyes went up and up. He looked steadily, satisfiedly, overhead. Joe Timmins followed his gaze up into the tree. Then he gasped. It was perfectly clear what had happened.

The day Joe Timmins was going downstream, he set fire to Danil's cab-

in and watched it go up in flames. Skag watched indifferently as the smoke billowed up. Joe Timmins said indignantly;

"Dammit, there ain't nothin' else to do! Nobody'd believe me! I'll tell 'em his cabin caught fire an' he was burned out in the middle of the winter, an' he musta tried to make it to Duggan's Landin' — an' didn't. I ain't goin' to try to make 'em believe what I read in them notebooks!"

Flames gushed high, and Skag drew back a little. He waited around in a friendly fashion until Joe Timmins — sure the cabin was finished — got into his canoe and pushed off. Skag wagged his tail as the boat moved out from shore.

"Listen here, Skag," said Joe Timmins. "You keep outa sight of men, or they'll try to make a sledge-dog outa you an' you'll have to kill 'em! That

goes for Deena too. I don't know about the pups. They oughta make out all right. But you two better be sure and stay outa sight!"

Skag wagged his tail again. Joe Timmins felt like a fool. He paddled downstream. As he paddled his lips worked as if he were phrasing something to himself. His expression grew more and more dubious.

Around the first bend from the site of the cabin he stopped paddling and spat overside.

"Hell!" said Joe Timmins. "I couldn't ha' done anything else! Nobody'd believe me! It wouldn't be no use to tell the truth to nobody!"

So much was plainly true. Then Joe Timmins spat again.

"In fact," he declared firmly as he picked up the paddle one more, "from now on I ain't even goin' to tell the truth about this to myself!"

SEED by Raymond F. Jones *(continued from page 29)*

mutant colony.

The name of Dr. Nathan Ord could not disappear from the world without a stir, either. That would draw attention to the colony, and the time would come when it could not be smothered beneath the indolence of men like Davidson.

He felt very good. He felt the comfort for which he had longed throughout a lifetime. It came with the sense

of Joanna's weight in his arms, and the pressure of her body against his.

He expressed his only regret. "They could at least have let you see Earth—just once."

She smiled up at him with renewed confidence. "It doesn't matter. There will be a time when the stream will be reversed and go from Mars to Earth. Our children — or their children. It's not important just now."

* * * * *

DON'T MISS MARVEL'S SPECIAL FEATURE THIS ISSUE! TURN TO PAGE 107 FOR THE OPINIONS OF 3 OUTSTANDING WRITERS ON THIS CONTROVERSIAL QUESTION! WHERE WILL THE FIRST SPACESHIP GO?

COVER-TITLE CONTEST WINNERS

Here are the lucky winners of MARVEL'S COVER-TITLE CONTEST for the May issue. Congratulations. To those who entered and did not come out in the top ten, try again!

PLACE	TITLE	WINNER	PRIZE
1.	"Transfer to the Hearse Ship"	MICHAEL WIGODSKY Houston, Texas	Saunders Cover
2.	"Lush Cargo"	Cpl. CLARK E. CROUCH Tucson, Arizona	Dianetics Mss. and portraits
3.	"Somebody Stole My Gal"	A. J. RACH, U.S.M.C. San Diego, California	Ames Illustr. (Ones)
4.	"O Rowdy, Restless Rocketmen"	RICHARD L. WOLFSON New York, New York	Paul Illustr. (Hallock's Madness)
5.	"Space Opera"	PAUL JOHNSON Perkins, Oklahoma	Harrison (Polyoid)
6.	"Frigid Female"	KEN MURRAY Colon, Michigan	Harrison (Saucer)
7.	"A Morality Space Hazard"	LAWRENCE DUMONT Augusta, Maine	Harrison (Circle)
8.	"Last of the Immortals"	LESTER MAYER, JR. Passaic, New Jersey	Napoli (Thing)
9.	"Indestructible Woman"	Pfc. JESSIE W. FLETCHER Camp Carson, Colorado	Napoli (Second Advent)
10.	"Sentiment"	DEAN NATKIN Chicago, Illinois	Burgos (Golden Girl)

The contest was so much fun we're going to continue it as a regular feature in Marvel. We're glad you like the idea and we want you to know that each entry is carefully considered by the judges before a choice is made. The thing we like about it is that everybody has a chance to win, and nothing to lose.

We think that this month's cover by Artist Hannes Bok should stimulate some interesting ideas for a title, and we can't wait to see who the winners will be. As you will see by the information on the back cover, this month the First Prize will be the Willey Ley, Judith Merrill and William Tenn manuscripts. Previous commitments with certain artists prevent us from giving the cover-painting away each month (but we will do it when we can). So look through the issue, decide which illustration you'd like to win, and get that title off to us today!

— THE EDITORS

AN EASY LITTLE PUZZLE

by PHILIP LATHAM



CHAPTER I

MARTIN DRISCOLL was hard at work correcting the mid-term examination papers for his physics class when the telephone rang. He glanced impatiently at his wristwatch. Nearly ten-fifteen. Now who the devil could be calling him at this time on a rainy Monday night?

"Answer it for me, will you, Mary?" he called to his wife in the living room. "I've got another stack of papers to correct after this bunch."

His wife rose reluctantly from the telecast of the main event in the wrestling program at the Olympic Auditorium. She was a large woman with

a commanding air and a suspicious disposition who occasionally found her husband a bit difficult.

"Maybe it's the Science Club," said Driscoll. "The secretary asked me the other day if I'd give 'em a talk sometime."

"Maybe it's the Board of Regents calling to notify you about your raise in salary for next year," his wife replied caustically. She sauntered over to the hallway and picked up the telephone. "Hello. Professor Driscoll's residence."

Driscoll continued automatically checking off answers. With a sigh he placed a red cross after *Momentum equals mass times acceleration* and an-

**QUESTION: WHAT ARE COSMIC RAYS?
(10 SECONDS FOR YOUR ANSWER!) . . .
THOUGHT-PROVOKING FUTURE-SCIENCE NOVELET!**



The nation's number one top secret, he said he now had in his possession—this fellow whom Professor Driscoll's wife referred to as "your friend, the mad scientist". But Driscoll was convinced that the man couldn't be a crank, that he was unquestionably a brilliant theoretical physicist, and if he claimed it, he must indeed have actually discovered the origin of cosmic rays!

other after *Newton's second law of motion is a definition of kinetic energy*. Why did Cucamong College require its English majors to take a science course anyhow?

Mary leaned around the side of the hall doorway. "It's your friend Brodeheim, the mad scientist. Want to talk to him?"

"You bet!" He tossed his red pencil aside and picked up the telephone.

"Hello, Brodeheim. What do you know?"

The speaker at the other end of the line sounded as if he were strangling. "Driscoll, my boy, I've got it!" he gasped.

"You mean you've got it?"

"Absolutely. Why the answer has been staring me right in the face all the time."

Instinctively Driscoll lowered his

voice. "Listen, do you realize what that means? It means you've got this country's number one, top secret in your possession. It means..."

"Sure! Sure! I know all that," the other replied carelessly. "But right now I need someone to talk to. Put away whatever damfoolishness you're doing and get over here. I've got to tell you about it." There were more strangled gasps. "No, I won't tell you right away either. Then you wouldn't appreciate it. I'll fix up a little puzzle for you. But an easy puzzle you can guess in ten seconds."

"Okay, I'll be right over," Driscoll promised. "But watch yourself, will you? You know what excitement does to your blood pressure."

"Yes. Yes. But hurry."

Driscoll went to the hall closet and began rummaging around among Mary's clothes for his overcoat and hat.

"Martin, is that you making all that racket in the closet?" his wife queried from her rocker by the television set.

"Yeah. That's me."

"What are you doing, dear?"

"I'm trying to find my hat and overcoat."

"What for?"

"I'm going over to Brodeheim's for a few minutes. He's got something important he wants to tell me." Driscoll pulled on the overcoat and wrapped his muffler around his neck.

Mary walked over to the door. "Martin Driscoll, do you mean to tell me you're going out on a night like this just because that crank..."

"Brodeheim's not a crank. Regardless of what anybody thinks, he's still

the best theoretical physicist in this country today."

His wife stood gazing at him with that expression of hopeless exasperation which women beam on their husbands when they persist in following a course utterly opposed to all reason and logic. "If he's so smart then why hasn't he got a big job of some kind with the Atomic Energy Commission instead of living alone like a hermit?" she demanded.

Driscoll did not reply. With a pre-occupied air he turned up his coat collar, slipped a flashlight in his pocket, and giving the brim of his hat a jerk, opened the front door and hurriedly ducked outside.

IN 1948 FREE balloon flights at an altitude of a hundred thousand feet revealed for the first time the presence of heavy nuclei hitherto unknown in primary cosmic radiation. These particles were assumed to indicate a gradual acceleration by repeated small energies rather than by the application of sudden great forces. Scientists became so thoroughly convinced of this idea that the investigation of cosmic rays for military purposes gradually was allowed to lapse. Thus when Rehovans in 1968 announced the discovery of a new source of energy of unparalleled magnitude, the news came with a shattering impact. Pooh-poohed at first by the experts, a situation bordering close upon hysteria developed a week later when delicate recording instruments disclosed all too plainly that the announcement was no bluff.

But what source of energy could it be? The fusion of light elements had become a commonplace long ago. The

total annihilation of particles such as the proton had never been observed experimentally and seemed extremely doubtful on theoretical grounds. A few suggested the action of crushed or degenerate matter but the notion was brushed aside as absurd. This left cosmic rays as the only alternative, with the result that the whole question was thrown wide open again. A new man was put at the head of the nearly defunct Cosmic Energy Research Commission, and money and authority was promised him such as no one in peace time had ever known before. But the urgency to get things done now amounted nearly to panic.

First act of the CERC was to recommend establishment of a base on the Moon where primary cosmic radiation could be studied free from the disturbing effects of the atmosphere and the Earth's magnetic field*. Interplanetary flight had developed rather rapidly beginning with the Aphrodite Project in 1947, so that by 1965 six robot rockets had been dispatched to the Moon, four of which had landed successfully and relayed valuable data on lunar surface conditions to Earth.

The next move was obvious yet for some undefinable reason men hesitated to take that first plunge into the void. Thus when the CERC bluntly told Congress that it had to have ten billion immediately for a manned rocket project there was a storm of protest. Despite the emergency, there were many who denounced it as an open act

* Data from Luna V indicated a horizontal component of magnetic intensity at the surface of the Moon in selenographic latitude 43° N. of approximately 100 gammas, or roughly 1/500th of the Earth's field.

of war; as a sin against the Almighty; as another crushing burden on a nation already taxed beyond endurance. But they reckoned without the new head of the CERC. Somehow, he made a deal with Representative Poulsen from Indiana, dynamic chairman of the House Ways and Means Committee. The bill was jammed through the House and Senate, rushed to the President, and became the law of the land before its opponents realized what was happening. Overnight the nation found itself pledged to an all-out program of interplanetary expansion. Whether for good or evil, the search for the origin of cosmic rays was on in earnest.

CHAPTER II

DRIVING CAUTIOUSLY through the rain, Driscoll pondered upon the train of events that had gotten him out of his comfortable home tonight. Fifteen years ago his life had been so neatly arranged; the road ahead had been so straight and clearly defined. As one of Professor Brodeheim's most promising students at the state university, he was assured of a position on the staff of some big research institution. He had fully realized, of course, that much depended upon the quality of the thesis for his Ph.D. degree, and he was determined that this should be no routine piece of hack work to be filed away in the gloomy archives of the library, but a paper worthy of publication in the *Physical Review*.

How often he dreamed of seeing the title in print with his name be-

neath it, an impressive sounding title such as "On the Relation Between Neutron - Alpha and Alpha - Proton Scattering." He imagined the chairman of his committee taking him aside some day. "Confidentially, Martin, the Physics Department feels that your thesis 'On the Relation Between Neutron-Alpha and Alpha-Proton Scattering' constitutes an outstanding contribution to nuclear physics — a really brilliant piece of work. By the way, the proof from the *Physical Review* just arrived this morning. If you could spare the time to drop into my office we might read it together perhaps . . ."

Sometimes he even felt a bit sorry for his classmates. Good solid men most of them but not likely to set the world on fire. Except possibly Loring, he decided. The fellow certainly had a shrewd insight into physical problems, an intuitive ability to grasp a situation and make the most of it. But was he a real research man? It was true that as an undergraduate he had made *Pi Mu Epsilon*, the campus honor society in mathematics, and even maneuvered around into getting himself elected president in his senior year, whereas Driscoll had fallen short by a few points. But then that was merely a matter of luck, as Loring himself had put it later.

Somewhere, somehow, the road that had looked so inviting had given out. First Brodeheim — always erratic and undependable — had gotten into trouble by meeting his nine o'clock class in Electricity, Sound, and Light, in a highly exalted condition, and proceeding to deliver a lecture on those subjects that was little short of inspired. On another occasion he omitted physics

entirely to concentrate on the low status of physics departments over the country in general, with special emphasis on the personnel at State. The Faculty Board had overlooked plenty from Brodeheim in the past. This time they felt he had definitely exceeded his limit. As a result, he received a little pink card one day politely informing him that under the circumstances they deemed it unwise to renew his contract for the forthcoming year: Brodeheim packed up, and left without a word. Thenceforth he lived alone, on a small annuity that was amply sufficient for his meager needs, but he lived with one burning ambition—to force recognition of his work from the scientific world that had thrown him out.

After his father died, Driscoll was forced to take the first job he could get, which happened to be teaching elementary physics and mathematics in a small sectarian college near Cucamonga, California. (The fact that he could also coach the basketball team had helped materially in securing the berth). The teaching job was to be nothing but a stopgap, until he could return to State and finish that paper "On the Relation Between Neutron-Alpha and Alpha-Proton Scattering." Only the years drifted by and found him still at his desk teaching.

And what of the others?

Well, Loring was chairman of the CERC, an international figure whose slightest pronouncement was big news. You read in the headlines how he had put the stubborn senatorial investigating committee in its place. You saw him on the cover of the picture magazines, the forefinger of his right hand uplifted in grim warning. On the

screen he had re-enacted the historic moment when that same finger had pressed the button that detonated the second hydrogen bomb. (The first one had been a dud). Driscoll wondered occasionally if he could really be as smart as he seemed. It was hard to know what to think any more.

For the third time Driscoll pounded on the door without result.

As usual, the Brodeheim domicile from the front looked as if it had been deserted for years, but through the bay window a light could be discerned somewhere in the rear, sure sign that the master was still on the premises. Brodeheim lived in a little room by the kitchen, originally intended for the cook, which he preferred to the tattered grandeur of the upstairs bedrooms of the old mansion. It also happened to adjoin the only bathroom in the house that worked.

"Maybe the old boy thought the rain stopped me and went to bed," Driscoll muttered.

For awhile he stood undecided. Then turning on his flashlight he splashed around the side of the house to the service porch at the rear. The back screen door was latched but it was no trouble at all to poke a hole through the rusty wire and lift the hook. Stumbling over stacks of newspapers and empty bottles he groped his way into the kitchen. The room was dark but under Brodeheim's door there was a thin streak of light.

Driscoll knocked sharply again without response. Listening with every nerve alert above the steady crackle of the rain he heard a low buzzing sound

followed by a sharp click. He knocked a second time then pushed open the door. Later he realized that he was not in the least surprised at what he found on the other side.

Brodeheim was seated at his desk in his old swivel chair with the green velvet cushions, his head thrown back against one side as if he had gone to sleep sitting up. His shirt was ripped open down the front, exposing his hairy chest, as if he'd torn it to secure more air. His right hand rested on the desk; the left dangled by his side.

Driscoll stood for a moment regarding his former professor with that sensation of mingled dread and awe which the sight of death generally inspires. Then because it seemed to be the thing that everyone does under such circumstances, he walked stealthily across the room and reached for the right hand at the wrist. For a moment hope flared within him then as quickly died again. It was the blood surging through his own fingertips that produced that throbbing sensation and not the dead man's pulse. He laid the hand gently back on the desk, straightened up, and surveyed the room.

Driscoll had often thought that Brodeheim must have patterned his housekeeping habits after those of the late Sir William Rowan Hamilton, the eminent mathematician who is said to have done some of his best work under the influence of Scotch whiskey, surrounded by a turmoil of papers and food. Brodeheim evidently found such methods conducive to thought, for it was not surprising to uncover a slice of cheese between the pages of *Tolman's Statistical Mechanics*, or to find page after page of the *Zeitschrift für*

Astrophysik stained by purple drops of Old Padre, the corner drugstore's best selling vintage port at 79 cents per 4/5ths.

Brodeheim was dead. Yet Driscoll knew that somewhere among the papers that littered the room there must be some that contained a clue to the secret over which Brodeheim had been so exultant only an hour before. The difficulty was in knowing what to look for, or in recognizing it if he found it. The papers on the desk under the shaded lamp seemed the most likely place to begin but a quick inspection revealed nothing that seemed of consequence, although on several sheets he did notice expressions involving *f* and *g*, Yukawa's terminology for the meson moment and meson charge. But the line of thought was too involved for him to follow.

Driscoll began systematically searching the room, starting at one corner and proceeding in a counter-clockwise direction, methodically shaking out books and picking up scraps from the floor and wastebaskets. Nearing the end of his search he was filled with a sense of frustration and despair. He had always felt certain that his work with Brodeheim would eventually compel respectful attention. He and Brodeheim were going to show the world that scientists, other than those in the great government laboratories with every technical resource instantly available to them—could still do valuable research. The history of science was full of such men: Schiaparelli discovering the canals of Mars with his eight inch telescope, the Curies, Pasteur, and dozens of others. Nature was not particular to whom she disclosed her se-

crets. Perhaps someday this room would be preserved as a shrine!

The idea forced him to smile despite the corpse in the chair. What a place to live in! A kitchen chair that served as a desk, a couple of battered chairs, a bed that sagged badly in the middle, and a shelf filled with books against the east wall. The one pretentious piece of furniture in the room was the mammoth cabinet by the bed, an elaborate contraption that combined, within one frame, every electromagnetic auditory and visual device that industrial technicians, and high-pressure sales promotion experts could devise. It was Brodeheim's one extravagance, and his greatest joy. Now Driscoll—observing it for the first time—noticed that the dial was still illuminated. Brodeheim had probably been seeking inspiration in Beethoven until his friend arrived. Driscoll reached over absently and snapped off the switch.

Well, what to do now? He was a little vague as to the proper procedure, and he supposed that a doctor should be summoned to pronounce Brodeheim officially dead, but how did you go about setting the wheels in motion? It wasn't every day that you had occasion to report a corpse.

After thinking it over for awhile and consulting the telephone book, Driscoll dialed central and asked to be connected with the Emergency Hospital. There was a brief delay, then a woman's sleepy voice answered.

"Say, I'm calling to see if you can help me," he began. "Here's what's happened. A friend of mine asked me to come over tonight. Wanted to see

me right away, but when I got here about an hour later he was dead. Now, I wasn't sure . . ."

"What's the name and address?" the nurse interrupted. She sounded as if calling on your friends, and finding them dead when you arrived, was an everyday experience.

"The name and address? Oh, yes. Wait a minute. Let me see." His mind had suddenly gone completely blank. He tried desperately to start it going again. The woman must think he was an imbecile. Suddenly it all came back. "This is 907 South Orange Grove Avenue. And my name is Martin Driscoll. I'm sure it must have been heart failure. He'd had several attacks before. . ."

He could hear the nurse giving instructions to someone in the background. "We'll be there as soon as the ambulance can make it in this storm," she told him. "And say, see that the light's burning out in front, will you? It's hard to see the numbers up in that district."

After turning on the porch light according to instructions, Driscoll wandered back to the kitchen and sat down to wait for the ambulance. He found that no matter where he looked his eyes kept straying back to the body in the other room. It surprised him how little emotion the sight aroused. Brodeheim had taken some hard knocks, he mused; still he had always done pretty much as he pleased. Doubtless his life had been no worse than that of most men. Except, of course, that it was tough to be cut down just when you had achieved your greatest triumph.

Suddenly Driscoll rose and walked into the study. Kneeling beside the

dead man and taking care not to disturb his position, he carefully extracted a long rectangular piece of paper from under the swivel chair where it had lodged against one of the cushions. When he held it to the light his heart hesitated momentarily, and then gave a hard thump. It was not a sheet of paper at all but a sealed envelope. Across the front in Brodeheim's bold hand was written,

DRISCOLL

WITHIN IS THE SECRET OF THE ORIGIN OF COSMIC RAYS

Driscoll studied it with rapidly mounting excitement. This must be the puzzle that Brodeheim had mentioned, the easy little puzzle that he could solve in ten seconds.

He tore open the flap and peered inside. But the room was so dark that he had to hold the envelope directly beneath the lamp before he could see the interior clearly.

The interior of the envelope was empty. Completely empty.

He examined the outside again. The words were still there. "*Driscoll — Within is the Secret of the Origin of Cosmic Rays.*"

Gazing at it blankly he became aware of the wail of a siren rising higher and higher in the night.

CHAPTER III

IN HAPPIER days the Western Office of National Defense had been a public museum where proud parents brought their children to see exhibits of Mayan

pottery or models depicting various stages in the evolution of the horse. Where once the California mountain lion (*Felis concolor*) had glared at visitors on Sunday afternoons, personnel men now interviewed long lines of hopeful applicants; while next door in the east wing, the carnivora from the *La Brea* tar pits had been forced to make way for pert young women in slacks.

After being challenged by three M.P.'s, two special guards, and an assortment of secretaries of various tints, each of whom eyed him as if they suspected he was trying to run a suitcase atom bomb attack, Driscoll at length found himself in the presence of his old chum, Dr. Walter J. Loring, chairman of the CERC. It was hard to believe that this middle-aged paunchy man with the graying hair was really the same Walt Loring who used to pinch his cigarettes on the library steps and crib his notes in physical optics. Yet on closer examination Driscoll decided that maybe he had not changed so much after all. It was merely that his manner was smoother and more assured and there was a certain authority in his speech that had been lacking before.

In the old days Driscoll had thought of himself as being the superior one. Now, before a word was spoken, he knew that something had changed; that their relationships had been reversed. Loring was relaxed, confident, the master of the situation. He was the one who groped for the right word, who was anxious to please, and who feared he would make a blunder.

"Sorry to hear about old Brodeheim," said Loring. "Hadh't heard any news

from him since I left school. I always had an idea he spent his declining years trying to forget it all."

"He really didn't drink so much," Driscoll said. "Or at least not nearly so much as people generally supposed. It was a heart attack that carried him off. He knew his heart was weak but of course you couldn't make him take care of himself."

"Good. Glad to hear he wasn't too much of a tosspot. Although far be it from me to throw the first stone. I dare say we're all prone to overindulgence in these strenuous times."

Loring leaned back as if glad to have the preliminaries out of the way, smiling broadly. "And now, Dr. Driscoll, what can I do for you? I can scarcely imagine that you came here to talk over college days."

"Hardly," Driscoll replied, shifting his position on the chair. "And by the way, it's still just plain 'Mister'. I never got my degree, you know."

Loring waved one hand in a deprecating gesture. "Better if we abolished all that academic claptrap in my opinion. Never pay any attention to titles myself. Always believe in taking a man for just what he is."

Driscoll smiled. "Well, it's nice of you to say so. Unfortunately everyone doesn't see it that way."

He took a deep breath and cleared his throat. "What I came to see you about was some work Brodeheim and I had been doing shortly before his death. You know he had always been interested in the cosmic ray problem. After he left State he put all his time on it. I used to drop in on him occasionally and it wasn't long before we were pretty close. Naturally his re-

searches were way beyond me but I was able to relieve him of a lot of numerical calculation so that he was free to concentrate on the theoretical end."

He glanced at Loring who nodded comprehendingly.

"Well, Brodeheim didn't have any more luck trying to find the origin of cosmic rays than the others," said Driscoll. "He used to get thoroughly discouraged. Said he needed an entirely new line of approach. Then about a week ago he evidently got a hot lead. I've never seen him so absorbed before. The night of his death he called me about ten o'clock. Insisted that I come over immediately. Said that he had *IT*—meaning, of course, the solution to the origin of cosmic rays."

"Just one question, if I may," Loring interposed. "I'm puzzled how a man like Brodeheim working on the outside could conceivably have made a contribution of major significance." He turned to Driscoll with a knowingsmile. "You understand, of course, that much new knowledge has been gained on the cosmic ray problem in the last ten years, knowledge that naturally must remain a military secret. Any man on the outside would be laboring under a severe handicap."

"I suppose that's true," Driscoll admitted, swallowing a couple of times, "although Brodeheim did predict the form of the energy spectra of heavy nuclei which was made public a month ago. You'll find it in the *Transactions* of the American Geophysical Union for May."

Loring glanced up sharply. "I didn't know that. First I'd heard about it."

"I guess nobody reads the *Transactions* of the A.G.U.," said Driscoll.

"They sandwiched it in between a paper on 'Gravity Measurements in Guatemala' and 'Volcanic Activity in Santa Maria.'"

"Oh, well, it wasn't important," Loring muttered, relaxing again. "Something anyone might have anticipated."

Driscoll hitched his chair closer to the desk. "Well, as I was saying, Brodeheim sounded dead serious over the 'phone when he said he'd hit on the origin of cosmic rays. But now here's a curious thing—for some reason it struck him as extremely funny. In fact, he was laughing so hard I had trouble in understanding him."

"That does seem rather strange," said Loring, frowning slightly.

"You remember what a great practical joker he was. Always thinking up tricks. Well, he said he wasn't going to tell me the answer right off. Said I'd have to solve a little puzzle first. But an easy puzzle that I could figure out in ten seconds."

"And did you solve it?"

Driscoll shook his head slowly. "That's the reason I came to you. You used to know Brodeheim pretty well when you were at State. I thought you might be able to see something where I had failed."

"Where is this puzzle of Brodeheim's?"

"Right here," said Driscoll. He took the envelope from his briefcase and passed it across the desk. Loring examined it carefully, turning it over several times with the tips of his fingers, then laid the missive face up before him.

"'Within is the secret of the origin of cosmic rays,' Certainly wasn't mod-

est about his attainments, anyhow. Well, what was this famous secret?"

"That's the trouble," said Driscoll. "There wasn't any secret that I could discover. When I opened the envelope it was empty."

"You're sure about that?"

"Positive."

"And he told you it would be an easy puzzle to solve?"

"Yes, that's what he said."

Loring picked up the envelope and tapped it lightly against his thumbnail, whistling softly. "Certainly not much to go on, is there?"

For several minutes he sat studying the envelope with an expression of deep concentration. At length he shook his head and tossed the envelope back across the desk with a regretful smile. "Sorry, but I'm afraid it doesn't signify anything to me either. I'm afraid the old master carried his secret to the grave with him."

Driscoll retrieved the envelope and replaced it carefully in his briefcase. He snapped the lock and sat gazing dejectedly at the floor. There was a short awkward silence. "I thought there was an all-out search underway for the origin of cosmic rays," he said. "If Brodeheim did find a good lead shouldn't every effort be made to follow it up? That was my reason for coming here—for taking up your time like this."

Loring got up and came around to the side of the desk where Driscoll was sitting. "Believe me, old man, if I thought there was really anything here I'd be after it like a shot. But honestly, man to man, you've got to admit it's pretty thin. Just suppose I did yank some of our top theoretical

men off their jobs and told them to get busy on it. Can you imagine what would happen if the newspapers found out? Why they can tear you to pieces over a thing like that."

"No, I guess it doesn't make much sense," Driscoll agreed slowly.

"But I'm sure it did to Brodeheim," he protested. "Sure, I know he was a little on the queer side, but just the same he used to be a big man in physics. Isn't it worth taking a chance at least?"

Loring began pacing back and forth across the long room clasping and unclasping his hands behind him. Suddenly he hooked one leg over a corner of the desk opposite Driscoll and bent forward impressively.

"Listen. I'm going to tell you something you're not supposed to know. Not right now at any rate. Although the story's sure to break before many days. But I'm warning you, for Pete's sake don't spill it till you read it in the papers."

He bent still closer at the same time lowering his voice almost to a whisper.

"For a couple of years it's been obvious we couldn't learn anything new about cosmic rays here on Earth. To get the information we wanted we had to get away from Earth. A long ways away. Understand?"

"Why, yes," Driscoll replied, looking a bit mystified. "I thought that was the reason for sending that expedition to the Moon."

"That's what everybody thinks. That's what we want 'em to think. But now here's the payoff. That rocket never went to the Moon."

"No?"

"No. It went to *Mars*."

He paused dramatically. Driscoll looked up at him wide-eyed. "You mean you couldn't get the information closer to home?"

Loring shook his head emphatically. "Not a chance. Had to get free from the deflecting effect of the sun's magnetic field.* A station on the Moon wouldn't have helped a bit. Mars was our only hope. The magnetic moment of the planet itself should be negligible. Anyhow, we've staked everything on it—mortgaged the whole damn country!"

Driscoll sat quietly for awhile thinking it over. "I suppose this is something else I'm not supposed to know but I can't help asking. When do you expect to get this information?"

Loring began pacing the floor again. "All we know is that they landed safely about twelve hours ago in the Mare Chronium. That's a spot in about south latitude 55°. It shouldn't take them long to get their stuff set up and working properly. Goodness knows, they rehearsed that job long enough under field conditions as close as we could simulate them." He lit a cigarette and inhaled deeply. "I should say that if we don't get the answer in another three days we might as well write the whole thing off the books."

A voice broke in over the intercom. "Dr. Loring, the congressman from Indiana is here now."

Loring frowned. "Ask him to wait. I'll be with him in a few minutes."

* Measurements made in 1912 at Mount Wilson indicated the sun had a magnetic field corresponding in polarity to that of the Earth with an intensity at the poles of 30 gauss. In 1955 measures made at Potsdam, Hamburg, and Pasadena showed the sun's field to be almost zero. Later the field began to increase again until by 1969 it had reached 75 gauss but with opposite polarity than before.

Driscoll rose to go. Loring walked over and placed one hand on his shoulder. "Well, thanks a million for coming in. It's been great to see you again. By the way, where are you located now?"

"I'm teaching elementary physics and mathematics out at Cucamonga College," Driscoll replied. "They also let me coach the basketball team."

Loring slapped him on the back. "Boy, how I wish I could get out of this madhouse back to that simple life again. Teaching the good old fundamentals. Working with young people."

Driscoll extended his hand. "Well, thanks a lot. And if you should get any ideas about that empty envelope you might let me know."

He was about to start for the door when Loring called him back. "Tell you what I'll do. How would you like to tell your story to someone who's in close touch with cosmic rays? Someone like Evans, for example. He shouldn't be too rushed right now. I'll arrange for an appointment this afternoon. Give you the details later."

"Evans!" Driscoll gasped. "You mean the same Evans who wrote that report on anomalous dispersion recently in the *Reviews of Modern Physics*?"

"The same," said Loring. "He's a pretty sharp boy, so don't let first impressions fool you."

"Thanks," said Driscoll. "Thanks very much."

CHAPTER IV

"WHO'D YOU SAY you want to see?" the guard demanded.

"Dr. Evans—Dr. Richard Evans," Driscoll told him. "Dr. Loring made an appointment for me at two o'clock this afternoon. Here is his personal note confirming it."

The guard examined the note suspiciously. Driscoll decided that the peculiar feature about guards stationed outside defense projects was their remarkable uniformity of appearance. They seemed to consist wholly of thickset elderly men who looked like landlords with a deep abiding grudge against their tenants.

"You Martin Driscoll?"

"That's right."

The guard reached for the telephone. "I'll have to get an OK from Major Mudgett before I can let you in. You can sit down on one of those chairs over there by the door."

"You mean this card from Dr. Loring isn't enough?"

"Nope. Nobody gets in here without Major Mudgett's say-so."

Driscoll retired meekly to one of the chairs where he sat for the next fifteen minutes with as much dignity as he could assume. Unfortunately, Major Mudgett was not in his office and all efforts to locate him proved fruitless. After prolonged interviews with several underlings in his department, however, Driscoll was at length permitted to enter the sacred precincts.

The building was a huge rambling structure that had been erected hastily to provide office space during the present emergency. The hallways were filled with young men and women scurrying back and forth with an intense preoccupied air, their hands full of papers. The clicking of typewriters and the hum of computing machines was in-

cessant. Through half-opened doors one caught glimpses of high military officials in earnest conversation with executives or their secretaries. Everyone seemed engaged on some vitally important errand except Driscoll. It reminded him of the days when he was a new boy at school standing alone on the sidelines watching the others at play.

After wandering around the halls, and getting lost several times, Driscoll finally located his man in a tiny office on the second floor. He was a tall cadaverous looking individual with a long horseshaped face, and a solemn priestlike air. He rose when Driscoll entered, bowed ceremoniously, and waved him to the only other chair in the room.

"I certainly hope I'm not interrupting your work," Driscoll apologised. "Everyone seems so busy in here."

"The activity in this building has after much effort now attained a steady state of complete confusion," Dr. Evans informed him in a cold reproving tone of voice. "The entropy is a maximum."

Driscoll started to smile but checked himself quickly at sight of Evans' gloomy countenance. "I expect Dr. Loring told you the object of this visit," he began after some hesitation, "but maybe I should go over it again in case he didn't make it all clear."

He glanced at Evans inquiringly who nodded graciously as if granting him permission to proceed. During the recitation Evans sat listening quietly staring straight ahead at the opposite wall.

"I feel that this message has some significance if only we could discover what it is," Driscoll concluded. "You

have also done extensive work on the cosmic ray problem. Doubtless there were times when your mind ran in the same channels as Professor Brodeheim's. Thus possibly his last words may convey something to you that has escaped the rest of us."

With a sigh Driscoll subsided and turned toward Evans expectantly. The latter continued staring straight ahead with the same deadpan expression. Presently, however, the scientist cleared his throat and began speaking more to himself than to his caller.

"Solution supposed to be in plain sight but unable to recognize. Probably too plain. 'Purloined Letter' again. Hmmm." He closed his eyes as if to concentrate more deeply at the same time tilting his chair back from the desk at a perilous angle. Driscoll sat watching him with fascinated attention.

"As you may have heard," he ventured timidly, "Professor Brodeheim was rather peculiar in some ways and occasionally imbibed more than he should. But he really did have a brilliant mind. If you've read any of his papers. . ."

Evans opened his eyes slowly. "I assure you that Professor Brodeheim's attainments are thoroughly familiar to me. I have already taken them into account in attempting to evaluate the evidence.

He closed his eyes again and went back into the silence. For several minutes neither spoke. At length Evans began to intone in a flat expressionless voice.

"We will assume that the envelope was empty because it was *intended* to be empty. On the outside is written 'Within is the Secret of the Origin of

Cosmic Rays.' But when the envelope is opened what do we find? Nothing. Mere nothingness. Hence, nothingness is the origin of cosmic rays."

He frowned deeply as if dissatisfied with the course into which his logic was leading him.

"I had thought of something of the same sort myself," Driscoll remarked, "but it didn't seem to make much sense."

Evans favored him with a ghastly grin. "You know, something whispers that we may have something here. Something really big. But I can't get it into focus. Can't quite make it crystallize. Like a name you know perfectly well but can't recall." He leaned across the desk gazing at Driscoll with glittering eyes. "Maybe it'll come while I'm shaving tomorrow. I get my best ideas while I'm shaving. Don't you find you get your best ideas while you're shaving, Mr. Driscoll?"

Driscoll, who considered shaving to be one of the burdens of human existence, hastened to reply that he often found the touch of the razor blade highly conducive to thought.

Evans straightened up relaxing the severity of his expression slightly as if temporarily appeased. Suddenly he seized a pencil and pad of paper, scribbled a differential equation across it with lightning speed, then sat studying it quizzically with his head cocked on one side. After due deliberation he wrote down an "equals" sign after the equation followed by a capital J. Next he erased the J and replaced it by a zero. After which he tore the sheet from the pad and hurled it in the general direction of the waste basket.

"I find your story singularly inter-

esting," he confided, "although truth compels me to confess that I can make nothing out of it at the present moment. As I said, quite possibly something of value may occur to me later. In the meantime, I will set my subconscious to work upon the problem."

"Well, that's very good of you," said Driscoll, unable to keep the feeling of disappointment out of his voice entirely. "But you do think that there may be some genuine significance in this message? That it is not just a senseless trick?"

"I feel there is something obvious that we are missing," Evans replied gravely. "I have a distinct psychic intimation not to dismiss the matter too hastily, despite the fact that it fails utterly to fit into any of our current notions concerning the origin of cosmic radiation. It may be, however, that the speculation of today will be replaced by definite knowledge in the near future."

Driscoll wondered if he should mention the rocket expedition to Mars but decided instantly against it. Loring had given him this information in strictest confidence and the slightest hint that it was known to an outsider could result in severe repercussions. To an outsider! Now, more than ever, he had that sense of isolation in the midst of activity. That paralyzing feeling of inferiority that comes with being the only one left out of the party.

Driscoll made some motions as if to leave but Evans gave no indication that he regarded the interview as closed. "You were then collaborating with Professor Brodeheim on the cosmic ray problem?" he inquired.

"A little," said Driscoll carelessly.

"He did the heavy theoretical work while I helped out on the numerical end. I also relieved him of odd jobs like digging up books and running down references."

"I have an acquaintance, a Dr. Percival Manning, who also has done some work on cosmic rays although his main field is in stellar astrophysics. Those in close contact with their material often have more insight into a problem than people like myself who merely spin theories about it. Perhaps I could arrange a meeting, if the idea appeals to you."

"Why, yes," said Driscoll. "I would appreciate that very much." A moment ago he had felt too despondent to speak; on the point of chucking the whole proposition. Now suddenly he was all eagerness again.

"Dr. Manning is working with the 200-inch this week, photographing polarization effects in stellar spectra. I will call Mount Palomar and inform him that you will come."

"Well, if you're sure your friend won't mind," Driscoll hastened to add. "Of course, I wouldn't want to get in his way or interfere with his work. . ."

"He won't mind if I tell him," Evans assured him grimly. "The son-of-a-gun owes me twenty dollars."

CHAPTER V

LIKE MOST astronomical observatories, the 200-inch on Mount Palomar gave the unknowing observer the impression of being completely devoid of life. After nosing around awhile, however, Driscoll encountered a sad looking per-

son who admitted to being a member of the staff. Did he know Dr. Manning? The sad looking character, who happened to be the janitor on his way over to see the assistant engineer about their fifty thousand dollar mining deal, replied that he knew Dr. Manning very well indeed. Well, then, did he know where Dr. Manning might be found? The janitor took a look at the sky. It was about time to start work. If he remembered correctly, Manning was at the *coudé* that night. They'd go down and take a look.

After going up a winding flight of stairs and through several devious passageways, that reminded Driscoll of a medieval dungeon, they finally emerged onto the main floor of the observatory directly beneath the Hale telescope itself. The dome was dimly lit revealing the massive framework of the instrument, and the giant horseshoe yoke upon which it was mounted. Through the open shutter in the dome high overhead, Driscoll could discern some of the stars in Virgo and Libra, while Mars glowed like a sullen ball of fire over the tops of some pines below.

The janitor pointed to a group of five men standing by a tank-shaped object on wheels near the control desk. "That's Manning over there in the center. The little guy in the sheeplined coat."

"I think I see the one you mean," said Driscoll. He regarded the group with some trepidation. "It looks as if Dr. Manning already had company for the night."

"Yeah. Some friends of his from back east. They got in late this afternoon."

"I see. Well, thanks for showing me

the way. I'm very much obliged."

His guide nodded and went off down the stairs. From his brief meeting Driscoll could never realize what an important man the janitor is around an observatory. In addition to his cleaning duties, he also answers the telephone, acts as a guide for visitors, sends in weather reports, and may be pressed into service on occasions to deliver lectures on the operation of the telescope—and astronomy in general.

Driscoll stood at the head of the stairs debating how to proceed. Once he started resolutely toward the group across the floor then stopped abruptly. Manning was telling a story at which they all laughed uproariously. They seemed to know each other very well. Now and then one would glance casually in Driscoll's direction then turn away after a brief inspection. Driscoll began strolling around the dome, evincing keen interest in the telescope mounting, the aluminum coated walls, and the prime focus platform. Presently the group headed toward the door in the wall near the south end of the polar axis. Manning opened it and motioned for the others to enter. He was about to follow after them when Driscoll came running up.

"Pardon me. Are you Dr. Manning?"

The little astronomer turned quickly one foot inside the door. He had a pudgy face with a small moustache and protruding eyes. "Yes. My name is Manning," he replied.

Driscoll introduced himself. "Dr. Evans was kind enough to call and make an appointment for me to see you this evening. In connection with some work on cosmic rays I had been doing with Professor Brodeheim." He looked

at the astronomer anxiously.

Manning regarded him vacantly then frowned suddenly. "Oh, yes. Yes," he murmured, "I do seem to remember something about it. Well, you might as well come on down here with the rest of us then. I was just about to start an exposure."

"Thank you," said Driscoll. He hurried down the short flight of stairs to the level where the others were standing. Manning closed the door and followed more slowly behind.

"Now, let's see," Manning began, turning to Driscoll, "what did you say your name was?"

"Driscoll. Just plain Martin Driscoll."

"Oh, yes. Sorry." He indicated the four men with a wave of his hand. "Mr. Pl . . . , I mean Mr. Driscoll," he mumbled, "I'd like for you to meet Dr. Ziltsberger from M.I.T. . . . Dr. Wojtaszek from Michigan . . . Dr. Tubbesing from the math department at Columbia . . . and Dr. Susoeff from the California Institute."

Driscoll shook hands with each in turn and tried to say something polite. After the introductions were over an uncomfortable silence descended upon them. Driscoll could think of nothing to say and the others made no attempt at conversation. He had always found it difficult to meet strangers under favorable circumstances, and in a situation such as this he felt absolutely tongue tied. Yet how often he had seen others carry off a similar encounter with ease? He felt furious at himself without being in the least able to do anything about it.

Manning was busy peering into eyepieces and making adjustments on the automatic guider. Presently he

stepped back from the spectrograph and pointed to the image of the star dancing on the slit.

"That star you see here is one of the most magnetically active known. One of our graduate students discovered it by accident about a year ago. He found that the europium lines in its spectrum varied tremendously in a period of about seven days. We tested it for Zeeman effect right away and found that it had a field of ten thousand gauss with a positive polarity. As the europium lines weaken the field changes along with them. Right now the star has a field of around six thousand gauss but of negative polarity. In a few more days the field will become zero and then go positive again."

They all stared at the flickering point of light.

"What's the name of this star?" somebody asked.

"It hasn't got a regular name of its own," Manning explained. "We call it by its catalogue number of HD 124929."

"I guess we'll all just be known by our catalogue numbers pretty soon if the government has its way," someone else remarked. There was general laughter.

"Say, that reminds me," Manning said. "Did you hear about the experience old Wassermann had at the Regional Hospital? It seems that one of the nurses wanted to make a blood test . . ." He launched into a long story filled with highly personal incidents concerning the individual in question who apparently was well known to them all. Everyone found the account excruciatingly funny except Driscoll who failed completely to get the point,

although he managed to laugh along with the rest of them. One anecdote led to another. There seemed no chance of getting Manning aside and relating his story in private. The night dragged on endlessly. He felt thoroughly tired and depressed.

After a couple of hours the conversation turned to stellar magnetic fields again.

"The electrostatic fields associated with these magnetically active stars might cause high energy particles to be ejected," said Manning. "At least, that's been suggested as a possible source of cosmic rays."

"Well, why not?" Susoeff asked. "They've tried everything else, haven't they?"

"Except intra-galactic space," Ziltsberger corrected. "To the best of my knowledge they haven't tried intra-galactic space yet."

"Oh, I'd almost forgotten," Manning remarked, "I believe Mr. Driscoll here has a theory about cosmic rays. Haven't you, Mr. Driscoll?"

They all turned to look at him with amused tolerant expressions. Driscoll was glad the *coudé* room was too dark to show his face clearly. Suddenly the whole affair of the empty envelope seemed ridiculous.

"Oh, it wasn't any theory of mine," he protested. "Professor Brodeheim was the one who did all the real work." He did his best to sound sophisticated and casual.

They continued to stare at him expectantly. Susoeff leaned over and whispered something to Tubbesing, who laughed and nodded vigorously. Driscoll felt thoroughly scared and mad at the same time. Brodeheim's death and

the empty envelope had come to have for him a deep personal significance. He had found it hard to tell the story to a single listener. But to state the facts baldly to a group like this . . .

The silence began to grow oppressive. Driscoll licked his lips. "Well, you see it was this way," he said, in a low husky voice. "My wife and I were sitting in the living room one night just sitting there when all of a sudden the telephone rang . . ."

He tried to describe the chain of events in a matter-of-fact offhand way but somehow he kept getting tangled up so that he was continually forced to go back and repeat them again. Although the men listened with polite interest Driscoll sensed that they suspected him of being one of those numerous cranks that pester astronomers with their wild theories. Manning did not make even a pretense of listening but devoted all his attention to the star.

"Well, that's about all there is to tell," Driscoll said at last. "The envelope was perfectly empty. But Brodeheim sounded so sure of himself. I feel that if we could only discover what he was driving at—"

"Damn!" Manning was bending down so close to the slit that his nose nearly touched the polished surface. "The confounded star's gone. Why it can't cloud up on me—I've got another hour of exposure left!"

He dashed up the stairs and through the door. The others looked at each other for a moment then trooped up the stairs after him, leaving Driscoll alone by the spectrograph.

Upstairs Manning was standing in the middle of the floor gazing up through the opening in the dome with

an exasperated expression on his fat face. Thick masses of fog were drifting slowly across the sky obscuring the stars. When the heavens were blotted out, Manning turned with a hopeless gesture to his assistant at the control desk, then walked over to the group huddled outside the door of the *coudé* room.

"I'm closing up," he announced. "We can take another look at it in about an hour but I'm afraid there's no hope." As he spoke the shutters began sliding inward with a low rumbling sound..

Manning stood watching the operation as if utterly crushed, his hands sunk deep in the pockets of his sheeplined coat. "We might as well go down in the galley," he said, when the last bit of sky was cut off. "No use standing around catching cold up here."

They were halfway toward one of the exits when Manning turned around. "Say, where's that cosmic ray fellow? The one that Evans sent up."

Everyone stopped to look but Driscoll was nowhere in sight. Susoeff peered inside the *coudé* room. "I think he must have pulled out," he said. "I heard him say something about having to get back to Cucamonga tonight."

"Back to where?" Ziltsberger demanded incredulously.

"Well, it certainly sounded like Cucamonga to me," Susoeff declared.

Manning shrugged impatiently. "Come on, let's go. I couldn't make any sense out of what he was talking about anyhow."

Outside the dome, Driscoll hurried along the narrow path that led to the parking lot. Several times he tripped over bushes but he stumbled onward as if unaware of anything around him. Once in his car he sat rigidly, staring

ahead at the road rushing toward him, his fingers clenched tight around the steering wheel, his lips moving perceptibly as he repeated to himself over and over again the story of the empty envelope.

CHAPTER VI

DRISCOLL GLANCED indifferently at the dishes Mary had prepared for dinner, then helped himself to a small slice of the roast. For several minutes they ate in silence.

"Don't you want some of these potatoes," his wife inquired presently.

Driscoll shook his head politely.

"They're cooked with cheese. I thought that was your favorite way."

"They look delicious. I'm just not very hungry."

His wife studied him from across the table. "You haven't said hardly anything about your trip to Palomar. I thought you'd always been crazy to see the place."

Driscoll picked up a spoon and stirred his coffee slowly. "It was an interesting trip," he said. "Of course, I couldn't look through the telescope itself. It was arranged for photographic work."

"What did the astronomer have to say about Brodeheim's letter?"

Driscoll placed the spoon carefully in his saucer. "Oh, not much. He was pretty busy trying to get the spectrum of this star. And then he had some other visitors there, too. We talked for quite awhile. Then when it clouded up I decided to come on home." He looked up at his wife with a smile. "I guess

that's about all there is to tell."

"What do you plan to do with the letter now?"

"I feel it's useless to push the matter farther," Driscoll replied, judiciously. "They just give you the run-around. Send you from one fellow to another to get you out of the way. Unless you're on the inside you don't have a chance, anyhow. My knowledge is all ten years old."

"Why it was only a couple of weeks ago that you were sure Brodeheim had something big. You were going to startle the world with his tremendous discovery."

"All right, so I was," Driscoll admitted. "That was before I knew what I know now. I should have had brains enough to quit right after I talked with Loring."

"Oh, my gosh!" Mary gasped. She sat up with a jerk, one hand pressed over her mouth. "I almost forgot. Loring called up about an hour before you came home."

"Loring called!" Driscoll echoed. He stared at his wife incredulously. "What on earth did he want?"

"He wants you to attend a conference tomorrow morning in his office at eight sharp. Says it's very important. He wants you to bring Brodeheim's letter along, too. And anything else you've discovered."

"That's the trouble, I haven't discovered anything," Driscoll said slowly. "Maybe he's gotten hold of something new himself. I wonder . . ."

He poured himself another cup of coffee, added a dash of cream, and began stirring it absently. "Confound it! Why couldn't Brodeheim have left something else behind besides that

damn letter? Just a hint at what he was driving at."

"Are you sure you looked through all his papers, dear?" Mary inquired. "You know how careless you can be sometimes."

"Certainly I looked through all his papers! If there'd been anything around worth salvaging I'd have found it." He waved one hand in the air with a wild gesture.

"The trouble with Brodeheim was that half the time he never bothered to put his ideas on paper. He had an unusual capacity for abstract thought. You know how some authors can practically write a whole book in their minds. Well, Brodeheim was the same way when it came to theoretical physics. He didn't bother to jot down notes, he simply talked them . . ."

Driscoll broke off suddenly with a startled look in his eye. For several seconds he sat frozen. Then, coming to with a start, he swallowed his coffee in one gulp, got up from the table and darted into the bedroom. Mary followed close on his heels.

"Martin Driscoll, whatever are you up to now?" she demanded.

"I'm going over to Brodeheim's again," he said, taking a key from a small box in one corner of his dresser drawer. "Maybe you'd like to come along."

"Good heavens, no. I always detested that filthy place. I never could understand why anyone should want to go there—especially now."

"Well, it's the same hole it always was," Driscoll replied, reaching for his coat. "Nothing's been disturbed since that night I found him dead. But I want to have one more look around. I

think I *did* miss something after all."

* * *

MOST OF THE men in Loring's office that morning looked vaguely familiar to Driscoll, although he couldn't place them all. Some, of course, he recognized instantly. Men like James R. Bradford, the secretary of war; Chief of Staff General, Hiram A. Reese; Dr. Albert E. Haskell, chairman of the Atomic Policy Committee, and a dozen others. Always before he had thought of them as disembodied two-dimensional beings that existed only on photographs and in newsreels. He could never visualize them as solid living creatures with bodily functions like his own.

Somewhat to his surprise, he also noticed Dr. Evans over in one corner of the room with his hands folded sedately across his chest. He regarded Driscoll blankly at first, then winked once very solemnly.

Loring got the meeting started with scant preliminaries. He was dressed immaculately, but his face appeared drawn and his eyes were too bright, as if he had gone too long without sleep.

"As you all know by this time, the first scientific report from the Mars expedition came through at 0300UT. I was summoned from dinner as soon as contact was established. My first impulse after scanning the report was to call a meeting at once, but inasmuch as it was impossible to get more than a handful together, I decided to postpone a conference till this morning. This also gave us time to decode and make the transcriptions you have before you."

He paused as if reluctant to proceed,

then compressing his lips into a tight line, plunged ahead.

"Although I have not had time to assess the report thoroughly, the major results would seem to require little interpretation. They are somewhat disconcerting, I must admit. Particles were found with energies in excess of 10^{20} ev which completely overthrows the theory that cosmic rays originate in the sun, as such highly energetic particles could not remain confined within the solar system, as we have perhaps assumed too confidently heretofore.

"On the other hand, if the energy density of cosmic radiation throughout all space is as high as 10^{-5} Mc² per cubic centimeter as the Mars observations now indicate, then the total energy in cosmic radiation far exceeds any energy known to us excepting the rest energy of matter itself.

"On the basis of this rather disturbing report it seemed advisable that the whole cosmic ray project be reopened for discussion."

He glanced quickly around the room at the grim faces confronting him, then suddenly became very intent upon finding something among the papers on his desk.

Nobody spoke for nearly a minute. Then a fat baldheaded man with a determined jaw whom Driscoll failed to recognize but who seemed to carry a lot of authority, rose slowly to his feet.

"I don't know how the rest of you here feel," he rumbled, inserting both thumbs beneath his ample belt, "but it strikes me that to call this report 'rather disturbing' is like describing the effects of an atomic bomb as 'malicious mischief.' Disturbing *bell*—why it's plain disastrous! We staked everything on

this Mars business. Poured billions into it. Now where are we? Why, we don't know as much as we did in the beginning."

"Well, I'd hardly say that," Loring replied. "It's true that the program cost more than was anticipated. But the results have been valuable in many other ways even if not directly applicable to the main objective. For example, we've learned something new about the chemistry of the fluorine molecule. Again, from development of the lunar rockets we've gained valuable data about the flow of liquid through nozzles . . ."

"Listen, Dr. Loring." It was a thick-set man with a shock of white hair and a beet red face who spoke. Driscoll recognized him as the fiery head of the House Ways and Means Committee. "What kind of talk is this? Telling folks we learned something new about squirting liquid through a nozzle. How much money d'you think that's going to get us? What d'you think people are going to tell me when I ask 'em for another ten billion? Why, they'll tell me to go squirt . . ."

He checked himself, took a deep breath, and started over again. "I was assured by the Military and Scientific Planning Commission that if the money for this Mars expedition was forthcoming then they could guarantee a source of energy that would end wars for all time. All right, gentlemen, I got you your money. Now where's your energy?"

"You were never guaranteed anything at any time," a general in the front row remarked calmly. "Obviously it was impossible to make such a guarantee."

"Yes, why don't you show us a contract that contains a statement to that

effect," another official added.

"Well, then it was made to me unofficially," the congressman retorted. "The way it was put up to me I considered it as amounting to a guarantee."

Driscoll sat listening to the discussion with much the same sense of wonderment as a spectator at a play. He could hardly believe his ears. So these were the same men that he had viewed so often with awe and admiration from afar. How many times he had read their comments with profound respect, marveling at their ability to conceive world movements and launch enterprises reaching out to the very stars themselves. How trivial his own little problems had seemed by comparison.

And now what did he find when he saw them at firsthand, behind the scenes? They were no different from himself. They were squabbling among themselves like little children, confused, hesitant, fumbling . . .

Watching from this detached point of view he gradually became aware of a change within himself. A growing sense of power and disdain for these 'great names', such as he had never experienced before. It seemed incredible to him now that he had once been afraid of such people. *Afraid*. Afraid of what? It was as if a load had been lifted that he had been carrying all his life leaving him elated and relaxed for what was yet to come.

The fat man with the pugnacious jaw was on his feet again. "Am I to understand that we're still totally in the dark about the origin of cosmic rays? Why they've got to come from somewhere! They just can't come out of *nothing*!"

"I wouldn't be too sure of that if I

were you." Everyone in the room turned to stare at Evans who stared back quite unabashed.

"What d'you mean, you're not so sure of that?" the speaker roared.

Evans did not reply but exchanged a glance with Loring, who raised his hand for attention.

"Gentlemen," he said, speaking rapidly as if to forestall interruption, "recently a former colleague of mine, Mr. Martin Driscoll, came to consult me regarding a clue to the origin of cosmic rays. He had been collaborating on this problem with a Professor Brodeheim, formerly a professor of theoretical physics at the state university before his, ah, retirement.

"One night Professor Brodeheim called him apparently in a state of great agitation. He had, he said, discovered by accident the secret of the origin of cosmic rays. He insisted that Mr. Driscoll see him at once. But when Mr. Driscoll arrived he found the professor dead. Before he died, however, he had written upon an envelope—apparently as a little joke—the following words: 'Within is the Secret of the Origin of Cosmic Rays.' But when the envelope was opened it was empty. And neither Mr. Driscoll nor I could guess the answer.

"Fortunately, I suggested that Mr. Driscoll tell his story to Dr. Evans. Three days ago Dr. Evans called to tell me he had the solution. Let me remind you that this was two days before the Mars report came through. In view of its startling implications I asked Mr. Driscoll to be with us this morning. Late last night he called to tell me that he had unexpectedly uncovered new evidence, evidence fully confirming Dr.

Evans' independent work. Mr. Driscoll has brought this evidence with him so that we may hear it for ourselves. Mr. Martin Driscoll."

Driscoll walked slowly to the front of the room, took a small round object from his pocket, which he laid upon the table beside a cabinet there. After giving some instructions to one of Loring's assistants, he turned deliberately and confronted his audience.

"As Dr. Loring said, the empty envelope didn't seem to make sense any way you looked at it. I spent a lot of time trying to figure out what it meant; finally decided to give it up as a bad job."

He spoke in an ordinary conversational tone of voice as if he had lost interest long ago in the story he was telling.

"Professor Brodeheim was a great one for playing jokes on his friends. This empty envelope looked like another one of his gags, and not a very good one at that.

"I went through his papers the night of his death but failed to find anything that seemed worth keeping. Then the other evening I recalled that Professor Brodeheim often preferred to record his thoughts rather than to write them down. I recalled, too, that his recorder had been turned on the night I found him; although I had thought nothing of it at the time.

"Well, to cut it short, I went back and found exactly what I was looking for—a wire recording evidently made only a few minutes before his death. You can hear the evidence for yourself."

He turned to the assistant who set the instrument in operation. Then leaning back against the table he stood lis-

tening with half closed eyes, as if he were indifferent to whether or not his audience liked what they heard.

It was obvious at once, that Brodeheim had never intended that the recording be heard by anyone else. First, there was nothing but vague scratching noises and occasional words too low to be intelligible. Then followed a low gurgling sound as of liquid flowing from an orifice. After a short interval Brodeheim began speaking in the usual flat voice that one uses in making dictation.

"... the idea of Einstein's theory of gravitation is that matter is fully described by the metrical tensor and the corresponding Riemannian tensors. We first notice, however, that matter cannot be represented by the full Riemannian tensor..."

The recording droned on in a seemingly interminable recitation of formulae, Evans for the moment had forgotten to be nonchalant and was listening eagerly. The others sat looking at each other with furrowed brows, unable to comprehend a word but determined that nobody there should be aware of the fact.

After the formulae there came some more silence broken only by the gurgling sound again, followed by a long sigh. Then Brodeheim started speaking but in a different voice from the one he had used before.

"And so the search for the origin of cosmic rays is ended. No wonder it has taken so many years. No wonder every theory has ended in failure. Electromagnetic fields in the sun, stars, and the nebulae—magneto-hydrodynamical waves. They were doomed to failure from the beginning.

"For all the time the solution has escaped us because it was too simple. Like mass and gravitation. Wherever we find one we are sure to find the other. Mass and gravitational energy are inseparable. Nobody has ever argued that we might find mass *without* gravitation.

"And so with space and cosmic rays. They, too, are linked inseparably in the cosmic hierarchy. We can no more have a cubic parsec of space without cosmic rays, than we can have a planet without a surrounding force field. There is symbiosis in cosmology as well as in the animal kingdom.

"Thus we find cosmic rays conceived in mere nothingness, vacancy, void. *For cosmic rays are a fundamental property of space itself.*

"Yet today billions are being spent in a mad search for this new source of energy and power. Perhaps I should keep my secret—let the fools go ahead. But, no; it is too good to keep. I must see their faces when they find that it is nothing but space, *empty space...*"

His voice broke into a harsh mirthless laugh that rose higher and higher until it ended at last in a kind of shrill cackle only to start all over again. The impact in the room, already charged with tension, was terrific. The desire to stifle, strangle, kill that laugh was unbearable. Only Driscoll remained calm, aloof, wholly unconcerned.

Then abruptly the laugh *did* end in a cough followed by a series of choking sounds. The gasping sounds could be heard distinctly for nearly a minute before they finally subsided. When the recording was still, Driscoll signalled for the assistant to turn it off.

(please turn to page 81)

THIS JOE

by A. E. VAN VOGT

MAYBE HE WAS THE MARTIAN . . . AND WE ONLY EARTHMEN! - - - - - INTRIGUING NOVELET!



Soon the old steam-atomic men would probably be just memories in Martian rail history. Because the veins of this imported Andean carried an incredible volume of blood, and his nerve cells were practically insensible to oxygen starvation. . . .

I HAD PUT on my pressure suit, and was walking through the roundhouse at Eastport, the Martian rail center, when I saw the stocky, big-chested guy with the purplish, mahogany-colored face come toward me. I knew at a glance that he was an Indian of some kind.

"Senor!" he said.

I stopped, politely, and faced him. "Senor, I am your new engineer-relief."

That hit me. On Mars, I had run into every creed and race at one time or another. But white men operated the big steam-atomics across the endless plains, and through the mountains, and along

the frozen canals. The reason was very simple. White supremacy was taken for granted.

I tried to hide my surprise. "Glad to have you along," I said. "Better get into your pressure suit. We go out in thirty minutes. What's your name? Mine's Hecton. Bill Hecton."

"Jose Incuhana. I don't wear a pressure suit."

"Sounds like South America," I began—and stopped. "Look, Joe," I said finally, "be a good fellow and go over to the equipment room and ask for an HA-2. Make it snappy, pal. It takes a little while to get into those things. Be seeing you in about twenty minutes."

I turned away awkwardly in my own bulky HA-2. I never did care for pressure suits, but on Mars, with its thin, thin atmosphere, they're essential to ordinary human beings who leave the shelters.

I had walked about five feet when I grew aware that Jose was still with me. He said, "You can see me right now, Senor Hecton." He sounded puzzled.

I turned and faced him, holding in my impatience. "Joe, when did you get to Mars?"

He looked at me soberly with his soft brown eyes. "Two days, senor." He held up two fingers.

"Have you been out there yet?" I pointed at the desolation visible through the asbesglas window.

He nodded. "Yesterday."

His eyes were bright and intelligent looking, and they stared at me as if he was still waiting for the punch line. Baffled, I glanced around, and saw Roundhouse Superintendent Manet. "Hey, Charles!" I called.

Manet, a big Frenchman with a twinkle in his black eyes, came over. He said, "Glad to see you two have been getting acquainted."

"Charles," I said, "tell Joe about Mars. That the oxygen content of the air is about what we have five miles up back home. Tell him about high altitude suits."

Manet shook his head. "Bill, Senor Incuhna is from the Andes Mountains. He was born in a town 18,000 feet above sea level. Mars is just another mountain top to him."

He broke off. "Oh, there's Frank. Hey, Frank, come over here!"

Frank Gray was rod-man on the engine's atomic-heated boiler unit. He strode over, a lean, tense man looking huge in his suit. He was introduced to Senor Incuhna, started to put out his hand, and then drew back with a frown.

"What's going on here?" he said. "I'm near the head of the list to become engineer. Who is bringing in outsiders?"

He didn't wait for a reply, but went on angrily, "I remember now. I've heard of this Indian idea. It's an insult to a good technician. What are they trying to do? Make us think we're just a bunch of day laborers?"

Manet said placatingly, "Frank, you are a good enough scientist to realize that if we can get people who can actually live—"

He stopped. Frank had turned away. We stood silent, watching him walk off. I glanced at Jose, but his face was impassive. Manet took out his watch.

"Better get aboard," he said. "There will be a few gadgets to show Jose, and you check out in exactly sixteen minutes."

On the dot, the steam-atomic locomotive, *Desert Rat*, was eased by an electric mule into the huge chamber which served as an airlock between the roundhouse and the Martian outdoors. A few moments later, I edged open her throttle. Sliding forward under her own thunderous power, she moved onto the frozen tracks of "outside".

In the east, the sun was just tipping the horizon.

* * *

I pointed, and called to Jose through the walkie-talkie in my head globe. He came over from his seat, and followed my finger with his eyes.

"Ice, senor?" he said.

"Ice," I agreed.

Frozen rivulets streaked the metal outer walls. I ran my gaze backward from the bulging front-cab. The door of the decompression chamber was just closing behind us, yet everywhere I looked the long, streamlined locomotive already glistened where moisture had condensed and instantly solidified.

Seventy below. A typical winter dawn in the temperate zone of Mars. Ahead of us, bleak and glittery on the flat plain, was the small Earth settlement of Eastport, center of a great mining area. We glided past the interconnected domes, inside which people lived in apartment units. Lines of railway tracks led into the principle domes, but the cars that were going with us—including a pressure-type passenger car—had already been coupled to the head of a long train of ore dumps.

I backed till we connected, then I slid open the door, and climbed down to the ground. The sun shone directly into my eyes from a sky that was a deep blue-black. Above, the stars were

still visible. They'd be with us all day.

I looked back. Jose was at the door. I called up: "Better shut the door!"

I heaved myself into the passenger car, went through the airlock inside, and into the comfortable interior. I took a quick glance at the men who were sitting in the bar, and realized I was piloting an important train. There were four top rail executives whom I knew, and one man who was introduced as Philip Barron, just arrived from Earth. He was a heavily built man with curly brown hair and blue-grey eyes that looked as hard as agates.

Vice-president Henry Wade began: "Bill, our head offices back home have gotten hold of this Andean Indian notion, see it as a cheap way of doing business; and so they're going to populate Mars with them. It's a blind man's deal. In a few years, there'll be tens of thousands of them; they'll stage a revolution and claim Mars as their private precinct, including expropriation of all the priceless equipment we've brought here."

Another man broke in: "How did he strike you, Bill?"

"Joe seems to be all right." I spoke carefully.

"Think he can live in this climate?"

I hesitated. "Seems to be able to breathe the air," I said finally.

A third executive laughed ironically. "One of the new men," he said. "The true Martian human. Hundreds more being technically trained. Women, too. Soon people like you and me, Bill, will just be memories in the Martial rail history."

"Like hell we will," said Vice-president Wade.

But the other man's words made me

uneasy. There were times when I cursed this route and this life, but more often I couldn't imagine anything I'd rather do. Besides, the pay was terrific.

Wade looked at me soberly. "You're going to be asked to give your estimate of him. Our idea is that he should be made to stack up to a high standard."

I said with a shrug, "I can't see this deal depending on my say-so."

Wade replied earnestly, "It'll depend on many things. Superficially, the notion appears to have merit. It's only when you examine it as a whole that you perceive the danger."

Barron, the only Earthside executive present, stood up and offered me his hand. He said, "It's not so bad as they make it sound. We're starting off with eighteen Indians in different types of work. I admit in the long run it's going to save money. Fewer dome shelters, an easing of compression costs, perhaps even a little profit for the shareholders. Is that bad? I don't think so."

As I climbed into the cab a few minutes later, I saw Frank Gray disappear into his section. I looked questioningly at Jose, but his face told me nothing. I hesitated, but Frank was a friend of mine and Jose wasn't; I decided to ask no questions. "Start her off!" I said curtly.

The train began to move, and I looked at my watch. We were eight minutes late. We had about five hundred miles to go before dark, not a great distance unless something went wrong. On Mars in winter, trains didn't run on night schedules. Extreme low temperatures made the rails dangerously brittle.

"Keep her down to twenty miles per hour," I said presently.

Jose nodded, but looked puzzled. Seeing him sitting there, warmly clothed but not in a pressure suit, I began to feel something of the tension that had been in the other men. "Joe," I said suddenly, "what kind of lungs have you got?"

He was no dumb Indian. He had been told about himself, and he gave. Andean man has lungs bigger than normal with more blood vessels in them. His heart can do at least an eighth more work than the heart of sea level man. His blood vessels carry a greater volume of blood, and his nerve cells are less sensitive to oxygen starvation.

When the Spaniards first came to places like Peru and Bolivia, they discovered that neither pigs nor birds, cattle nor Spaniards could breed above ten thousand feet. It was only after a generation had lived at about eight thousand feet that the descendants were able to reproduce at fourteen thousand. The Indians had been there before them from time immemorial.

The facts and figures gave me a sinking sensation. I looked at Jose's purplish-red complexion, and realized that he *could* be a Martian. But it was obvious that I couldn't.

I saw the pile beside the tracks far ahead before Jose did. I expected it, of course; and so I waited, wondering how long it would take him to spot the object. Twenty seconds went by, and then he pointed.

I sighed. No sign of oxygen starvation with that kind of vision.

"Start braking her!" I ordered.

He looked at me with some surprise, and I know he was thinking it was too soon. He was not making due allow-

ance for the fact that it took a lot longer to stop a train on Mars. Same mass as on Earth, but less weight, less friction. We came to a halt, the wheels grinding on the rails, the engine panting and shuddering.

There was no one in sight, only the huge bag lying beside the tracks. I guessed there was about two tons of rock inside the bag. "I'll go outside," I told Joe. "Then you drive forward till I wave for you to stop."

He nodded his acceptance of my instructions. As I slid the door open, he pulled his big collar up over his ears; and, when I had climbed to the ground, he came over and shut the door.

It was not quite so cold as it had been. I guessed the temperature had come up to fifty below. The long train started as I motioned Jose—and stopped when I waved. I used the "claw", a small crane which we carried for the purpose of lifting such bundles into an ore car. And presently I was back inside the engine cab.

I said, "You can speed up now."

The speedometer climbed. At seventy, Jose leveled her off. He explained: "I don't know enough about this terrain, senor, to go any faster."

I nodded, and took control. The speedometer needle edged higher. Jose said, "That bag of stuff, Bill—" He almost said it "Beel"—"who put it beside the track?"

I'd been wondering if he would show any curiosity. "A race of small, furry creatures," I answered. "They're very shy. They live underground, and dig ore for us." I grinned at his puzzled expression. "We don't want the ore, because it's usually only rock. We're interested in the material of the bags.

It's as thin as paper, completely transparent, and yet it can withstand the weight of tons of rock. They manufacture it from their own bodies, much the way spiders produce webs. We can't seem to make them understand that we want only the bags."

We did the next fifty miles at an average of 84 miles per hour. It was a straight run, and it was like gliding along on ice. On every side was a flat waste of sand that had not changed in all the years since I had first seen it. The sun was climbing in a sky that was bluer now, the stars faint but still visible. We plunged through that barren world to the hiss of the high speed steam turbines, and the hum of the gears that transmitted their power to the wheels. I felt more than human. I was the master of a juggernaut that violated the ancient silences of a planet millions of miles remote from the planet Earth.

As I saw the hills in the distance rearing up like low mounds, I began to slow. On the panel a red light blinked. "8 miles", the indicator said. I applied the brakes.

Jose pointed questioningly at the winking light.

"Sand on the tracks," I said.

Dune country. Sand so fine that even the thin winds of Mars could lift it. In motion, it looked like trailing smoke. As far as the eye could see there were gusts of it blowing, and here and there the rails had completely disappeared under the drifting stuff.

We moved in fits and starts, swiftly when the track looked clear, and very slow, with our blowers whining and hissing, where there was sand. Altogether, about an hour and a half went

by before, once again, the roadbed belonged to us.

Halfway. And only a few minutes after ten o'clock. We were first. Jose slid open the door.

"Go out?" he asked.

"Sure."

We were on a rocky plain that was as crinkled as an old man's face, and almost the same grayish color. I watched Jose scramble over the rocks and head for a prominence a hundred yards away. It took stiff climbing in places, but he made it with apparent ease.

I grew aware that Frank had come into the cab. I glanced at him; and he said with a sneer, "Showing off to the big shots."

I hadn't thought of that. It could be true. Jose knew that he was being tested, and that there was hostility towards him, not only from Frank Gray.

There was a faint rumble in the distance, and then a shrill whistle. The *Prairie Dog* rounded the bend and bore down on us. Glittering in the sun, the long engine roared past, its thunder somewhat muffled by the thin air, as was the trailing clatter of its empty ore cars. When the train had passed, I saw that Frank was going back into the rod room, and Jose was climbing into the engine.

I looked him over sharply. He was breathing heavily, and his cheeks were mottled. I wondered if it was entirely from exertion. Our eyes met; and he must have guessed why I was watching him, for he said quickly, "It's all right, senor. I feel fine."

I thought I detected a note of irony in his voice. I walked to the door, opened it, and then turned to him. "Jose," I said, "you'll get an honest

deal from me, I'm going back to the passenger car. You're on your own from now on in."

Jose looked startled. Then his strong jaw set and he said gravely, "Thank you, senor."

Wade and the other executives were astonished when I explained what I had done. But Barron, Earthside executive, nodded approval. "After all," he said, "it's a fair test. Can he run a train on his own, or can't he?" He finished, "We can always phone him to stop, and then send Bill back up to the engine."

His words were received in silence, and from the sullen expressions of the others I guessed that my action was unpopular. The silence continued while the train accelerated. I must have dozed in my chair, because I awakened with a start to realize that the car was shuddering and swaying. I took a look out of the window, and felt alarm as I saw how swiftly the desert was speeding by.

I glanced around quickly. Three of the men were talking together in low tones; Wade was dozing, and Barron sat placidly smoking a cigar. He looked preoccupied.

I climbed casually to my feet, walked to the phone and called the engine cab. After it had rung five times, I got an uneasy feeling in the pit of my stomach. I returned to my chair; and it seemed to me, as I glanced again out of the window, that the train had actually gained speed. I groaned inwardly, and, glancing up, saw that Wade's shrewd brown eyes were studying me.

"Isn't your man going a little fast?" he said.

His assistant snapped angrily, "Irresponsible, if you ask me!"

Barron sighed, and looked at me gloomily. "Ask him to slow down."

I went to the phone, and he called Frank Gray. The phone rang three times, and then Frank's voice said lazily, "Hello."

"Frank," I said in a low tone, "will you go up to the cab and ask Jose to slow down?"

"I can't hear you," he said. "What do you want?"

I repeated my request, emphasizing the words but still trying to keep my voice down.

Frank said irritably, "Stop mumbling. I can't hear a word you're saying."

I had been feeling both sorry for, and angry with, Jose. But there's only so much you can do to help a man who's got himself into a difficult situation. Clearly, and without worrying about being overheard, I told Frank what I wanted. There was silence when I had finished. Then:

"Go to hell!" said Frank. "It's not up to me."

He stuck to that, despite my arguments. I said finally, "Just a minute!" And went back to the group. They listened in silence, and then Wade whirled on Barron.

"Look what you've done to us with that Indian of yours!"

Barron chewed his cigar savagely, turned and stared out at the spinning landscape, and then said, "Better order that rod man to do what Bill said."

Wade came back presently from the phone. "I had to give him permission to use force if necessary."

A few minutes later, we began to slow down. By that time Barron was climbing into a pressure suit, and Wade had sent his executive assistant to get

a suit for him. They exchanged caustic comments until the train finally came to a halt, Barron stubbornly clinging to the attitude that the defection of one Andean Indian didn't condemn all others. I led the way to the engine, and all I could think about was: What *could* have got into Jose?

Frank opened the cab door for us. There was no sign of Jose as we climbed in. Frank explained, "I found him lying on the floor here gasping for breath, so I put him into the rod room and built up a little pressure." He added complacently, "Nothing wrong with him that a little oxygen won't cure."

I looked at him for a long moment, fighting the suspicion in my mind. I said nothing, however, but made the necessary adjustments in pressure, and went into the rod room. I found Jose sitting on a chair. He looked at me miserably, but shrugged at my question.

I said earnestly, "Jose, I want you to forget that pride of yours, and tell me exactly what happened."

He said unhappily, "I became dizzy, and I had a feeling like bursting. Then I do not know what happened."

"Why did you speed up the train?"

He blinked at me, his dark eyes wide and uncomprehending. "Senor," he said at last, "I do not remember."

"My guess," said Frank from behind me, "is that we ran into a low pressure area, and as far as he was concerned it was the last straw."

I shook my head. I was remembering how Jose had matched my vision early that morning, and remembering also the way he had climbed the hill at Halfway. The stamina he had displayed in those two incidents wouldn't have yielded to a slight change in atmos-

pheric pressure. Also, the cab doors were closed. Since they were nearly airtight, the pressure inside the cab would hardly be that sensitive to temporary changes outside.

I turned and looked at Frank. He stared back at me defiantly. Twice, I started to speak, but each time I remembered how long we'd been friends, and remained silent. Over his shoulder, I saw that Barron was examining the air pressure gauges and controls for the inside of the engine. He walked over to Wade and spoke in a low voice that sounded grim. The vice-president kept shaking his head, and ended the conversation by going over to Frank. He held out his hand.

"Mr. Gray," he said in a too-loud voice, "I want to thank you for saving us from being wrecked. Just remember, I'm behind you all the way."

Barron was tugging at my arm. I went with him out into the cab. He said quietly, "Is it possible to control the air pressure in the cab from the rod room?"

Since he could have obtained that information from other sources, I didn't hesitate. "Yes," I said.

Barron went on, "Did the Indian show any signs of cyxgen starvation in your presence?"

"None."

"Have you any idea whether your rod man is hostile to this notion of bringing in the Indians?"

"I have no idea," I said. I looked at my watch. "But I think we'd better get going. We're 43 minutes late."

Under way again, I left Jose at the throttle, and stepped into the rod room. Frank was adjusting temperatures, and I waited patiently till the gauge read-

ings balanced. Then, he looked at me. I said, "Pretty smart."

He didn't deny it. "It's now or never," he said.

"Then you admit you reduced the air pressure on Jose?"

His tanned face grinned at me through the transparent visor of his suit. "I admit nothing," he said, "but I'm going to wreck that little buzzard's plans if it's the last thing I ever do. And I have an idea I'll get all the backing I need."

I tried to make him see that if there were any human beings at all who could live on Mars without artifice, then no one could fairly deny them the right to do so.

"Call *him* a human being?" Frank sneered.

I stared at him, and in that moment my feeling of friendship disappeared. I said very slowly, "If you bother him again on duty, I'll take it out of your hide."

Frank looked at me sullenly. "I've been wondering just where you stood," he said. "Thanks for telling me."

For an hour we rolled along through a rock-strewn wasteland, and then we came to an area of low hills and green sheets of canal ice. I was telling Jose that the toughest part of the run was over when the red light began to blink.

He looked at me. "Sand?"

I shook my head, frowning. "Not here. Something must be on the tracks, or crossing them."

It was a sand lizard, eighteen feet of senseless scarlet and yellow monstrosity. It had caught its leg under the track between the two ties. All the beast had to do to free itself was to cease pulling forward, but it was too moronic for that.

Wade phoned me, but lost interest as soon as I explained why we'd stopped. "You know how to handle them," he said. And rang off.

I knew the technique all right, but I wasn't happy about it. I explained to Jose that men who hunted the creature wore an over-suit of the super-resistant material we'd picked up at the beginning of our trip. It provided protection against a casual slash, though even it was not much help in a direct attack. In an emergency, safety lay behind the creature. Out of sight with it was out of mind.

Frank Gray sauntered out into the cab. He shook his head when I suggested that he and I help the lizard to free itself. He said, "That thing lives off a particularly tough cactus. It's got teeth you could cut rock with." He finished satirically, "Joe's the man to do the job. If his suit gets torn, it won't do him any harm."

Jose picked up a crowbar. "Where is this over-suit, senor?"

"We carry extras," I said reluctantly. "I'll go with you."

The over-suits covered us completely up to the neck. Above that, my own rigid vitrolite helmet offered me further protection. Jose had only his thickly insulated cap. If his people became permanent fixtures hereabouts, they'd have to make provision for such encounters as this.

I took a long oil gun from the tool box, and we climbed out of the cab. As it saw us approaching, the lizard turned its fiery head, and watched us. But it kept straining steadily forward.

I squirted oil into its fathomless blue eyes. Then the two of us prodded it from its left side, its right side and from

behind. In response, the lizard hissed with its tongue, and made a rattling sound with its throat. But it continued to tug forward in that idiotic fashion.

The sun sagged towards mid-afternoon. Patiently, Jose and I kept poking at the beast until, finally, some mental circuit seemed to close inside its brain. It ceased its forward movement. Hissing, it turned as if to come after us.

Its leg slipped easily and naturally from under the track. And it was free.

"Jose!" I yelled. "Get behind it."

The footing wasn't too good in the shifting sand, and Jose moved a little awkwardly. Four inch talons whipped the air so close to his cheek that I held my breath. Then he was behind the creature, which stopped turning, evidently having forgotten his existence.

The last we saw of it, it was laboriously climbing over a rock—instead of around it—and heading away from the tracks.

As we turned back toward the engine, there was a swish and a clank, and the long train moved towards us. I caught sight of Frank Gray high in the cab sitting at the controls. He waved mockingly as the powerful locomotive glided past us, gathering speed with every yard.

I grabbed at the handrail as it swept by, caught hold, and hung on with everything I had. Grimly, I reached for the next rung—just as the cab door above me slid open. Frank bent down and with a long wrench banged me on the fingers. Despite the protection of my heavy gloves, the instant pain and numbness broke my hold. Wildly, I grabbed at the rung below with my other hand.

Frank knelt, and swung his wrench

again. This time he missed, but he drew sparks from the metal. I'd had enough, however. I couldn't let him cripple my other hand. It might send me under the wheels. Before he could strike again, I lowered my feet to the ground, started running, and let go.

I pitched headlong into the gravel of the roadbed. The cushion of air in my pressure suit saved me from serious injury. But I was gasping as I scrambled shakily to my feet. My plan was to swing aboard the ore car, but as I fell in beside the train, running as swiftly in my bulky clothing as I could, I realized the train was going too fast. I was about to give up when a hand like iron grabbed the scruff of my neck.

"Senor, *run!*"

I ran till the salt of exhaustion was in my mouth, until I could hardly see because of the tears in my eyes. I fumbled blindly for a rung of the ore car ladder to which Jose was clinging.

With his clutch supporting most of my weight, I caught that rung; and presently we lay on top of the car gasping for breath.

I stood up, still shaky. "I don't know what that buzzard is up to," I said, when I could speak again, "but we're going into the passenger car, and sit it out."

Our sudden appearance caused a minor sensation. I explained briefly what had happened, then picked up the phone and called the engine. It rang three times, and the line went dead. Since all power on the train was supplied by the locomotive, it seemed evident that Frank had cut the telephone system. His purpose was obvious — to prevent us from calling Marsopolis, our destination.

Silently, I cursed my stupidity for not having called there first. Frank might not have thought of it in time to stop me.

An official was shrugging. "He's behaving very foolishly. He can hardly wreck the train without danger to himself. All we have to do is sit tight."

A sudden thought struck me. I went to the gauge panel. The pressure was a full pound low, and the temperature was down slightly. I turned to the others, frowning.

"I hate to say this, but I'm afraid he's cut the power for our air conditioning."

Philip Barron looked pale, but his eyes were steady. "How long?"

"Not more than an hour," I said. "We could stand the cold, but we'll all pass out if the pressure drops much more than half — all except Jose, that is."

There was a grim silence. Then Barron glanced at Jose musingly, and said "Yes, there is you. I suppose Gray figures it'll be his word against that of an Indian. The arrogant fool! Of course we could all sign a statement as to what actually happened, and leave it with you—"

"To hell with that!" said another official. "That might help Jose, and it might help justice, but what about us?"

I broke in at that point. "You're overlooking one thing. Jose can stand low pressure, but he can't breathe poisoned air, and he wouldn't last long outside after dark. We have only one chance." I turned. "Come on, Jose, let's get aboard that engine."

There was a fire axe in each of two emergency cases at opposite ends of the car. We armed ourselves with them, and a minute later climbed up to the

top of the train and started forward. I could see the glistening blue and red locomotive with its bulging cab, and the figure of Frank Gray sitting in it.

What worried me was that there was a high-powered rifle in the cab—and at the moment Jose and I were as exposed as two sitting ducks. I doubted if Frank would fire unless he had to—bodies with bullets in them would be hard to explain away—but the possibility put a tension in me.

The shallow Martian sky was already darkening in the East, and Earth as an evening star shone brightly above the declining sun. There was still about an hour of daylight left, but since we were well over a hundred miles out, the fact gave me no comfort. We were in semi-mountainous country, and the track was too winding for high-speed travel.

I pulled my collar more tightly around my ears, and bent into the freezing wind. I noticed that Jose paused often to clap his hands together as we started forward along the top of the tank-tender, which carried the engine's water-reserve.

I saw, at this closer range, that Frank was watching us through the glass. The rifle lay on the window-ledge beside him, but he made no move to pick it up. Apparently, he was waiting to see what we were going to do.

I wasn't sure, myself. Get the cab doors open somehow, and hope to get in without being shot down.

We climbed to the top of the cab, and lay prone just above the doors, Jose on one side, and I on the other. Simultaneously, we swung our fire axes down against the heavy panes of the doors. Though shatterproof, they were hardly built to withstand such blows. On my

side, a sizable section of glass broke loose, and fell inside.

That much was easy. Now, we had the ticklish problem of getting down there and reaching inside to unlock the doors.

I slid over the edge, and started down the steel ladder alongside the door. Jose's face was just disappearing over the other side. And still we were all right, being protected by the metal walls of the cab. To get at us, Frank would have to poke his rifle through the hole in the glass on either side. But he wouldn't do that. He'd sit there amidships, and try to pot the first hand that reached in. After all, time was in his favor.

The long train glided along into a gathering twilight. The wheels ground and squealed with a steely sound. The engine groaned and shuddered, swaying as it curved past a steep embankment. I was nerving myself for that first, dangerous thrust—when a shot rang out inside the cab. It could only mean one thing. Jose had grabbed first.

Galvanized, I reached through the hole in the glass. And my hope was that Frank's gun might still be turned the other way.

Familiarity counted. I knew that lock, and I opened it with one quick twist of my fingers. And jerked my arm back.

A hole appeared in an unbroken part of the glass just above where my hand had been. And another shot sounded.

Hastily, I gave the door a strong push from the outside. It rolled back with a bang. And then, there was Frank standing in the opening, leveling his rifle at me.

I pressed flat against the cab, but realized the futility of that, and struck

at him with the axe. The blow fell short, as he drew back slightly. I could see his face through the transparent visor of his head globe, his lips twisted, his eyes glittering. In pulling away from me, he had let the muzzle of the rifle drop. Now, deliberately, he raised the gun once more.

As his finger tightened on the trigger, I threw my axe at him. He ducked. The handle of it brushed his shoulder.

For a third time, the muzzle of the gun came up; this time it pointed at my helmet. I thought despairingly: "We're proving our weakness, Frank and I." This whole incident, the very arrival of Jose on Mars, had happened because our air supply *was* so vulnerable.

In some way, I had hoped to drive that fact home to him.

Even as I had the vague thought, I was stooping low, and trying to swing through the door into the cab. The rifle went off practically in my face. And Frank staggered drunkenly.

At least, that was the way things seemed to happen.

What amazed me was that the bullet intended for me went off into the gathering darkness.

And then a fire axe clattered to the floor of the cab out of nowhere—and

the truth dawned on me. Jose had thrown it from the other door with enough luck or precision to smash Frank's head globe.

Frank was reeling. He would have plunged through the open door if I hadn't grabbed him instinctively. As I pushed him back inside and followed him, closing the door behind me, I saw Jose leaning against the opposite wall. His left arm was dangling, and dripped blood.

The grayness of shock was in his face. But he grinned at me as I dragged the limp body of Frank Gray toward the rod room, where I could apply pressure and save his life—so that a criminal court could decide what to do with it.

* * *

These days, the story of Jose is the part of my Martian life my kids most want to hear about. Which makes me feel hopeful. Living here in retirement in Colorado at 8500 feet, I've managed to work up a community enthusiasm for a long-run scheme of mine.

We're building a town at 17,000 feet; and our children are already spending time up there. We've got it all figured out.

Their kids are going to be Martians.

AN EASY LITTLE PUZZLE by Philip Latham *(continued from page 69)*

"As you can readily understand from what you've just heard, Professor Brodeheim had a rather peculiar sense of humor. When he found that cosmic rays are a natural part of space itself, the idea struck him as a monstrous joke, a colossal trick that we have been playing on ourselves all this time. In fact, it struck him so funny that he died

laughing over it."

The assistant handed the spool of wire back to Driscoll who looked at it thoughtfully for a moment, then thrust it carelessly in his pocket. "Well, I guess that's all," he said, and walked back to his seat.

But nobody there laughed, nobody even smiled.

• End

AT NO EXTRA COST

by PETER PHILLIPS

The Preacher didn't say that Servotrons would eat your baby, or that they smelled bad — he simply said they had no soul. . . .

" . . . AND I say to you that this Breath of Life is a holy thing, and that they who sin against it will receive the judgment of the true Maker. His wrath shall be on their heads who defile His greatest gift, who cannot create but only subvert and warp and wrench asunder, who are as blind, idiot children that mock their parents in play. For Life without Soul is without blessing; and Flesh without the Spirit is an abomination . . . "

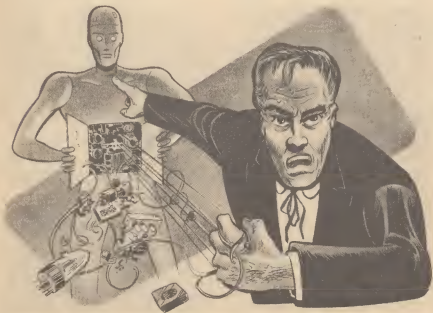
You could hear the capitals.

Macho flipped off the audio, leaving the automatic transcriber still running, and swore slowly.

The young man sitting at the opposite side of his desk smiled, shook his head. "Not so, Mr. Macho. The man's good. Elizabethan blood and thunder, rounded periods, phrasing, vocabulary, cadences — perfect. Intensive study of semantics and rhetoric."

"It's blasphemous."

"How? The translators of the Authorised Version of the Bible didn't



get a lien on the language. There was a gentleman named Shakespeare, remember."

Macho chewed air. "We must get him on something. Sales are down ten per cent. and still slipping."

"What's Bertie's final word?"

Macho fingered the terse, thousand-word report of company lawyer Bertram Makepeace, skittered it off his desk with impatient contempt.

"Says we can't touch him. The International ruling is explicit. Freedom of speech and worship, full access to all means of disseminating opinion. The Limitations Statute gives protection against rivals or misrepresentation. But he's not a rival. He's just a nut."

"Misrepresentation then—"

"How? He doesn't say that our Servotrons are lazy or inefficient or that they smell, or eat the baby, or draw rude pictures on the wall. He just says they have no soul!"

"One would scarcely imagine that a drawback in this enlightened age," the young man murmured, blue eyes wide and innocent.

Macho regarded him suspiciously. It was often difficult to decide whether Johannes Hensen was being perfectly sincere or vastly cynical. Perhaps that was why he was one of the best—and youngest—men in publicity.

Macho decided he was being cynical. "Funny man . . . It happens it is a drawback, the way The Preacher puts it over. People haven't heard that sort of thing since the big revivals in the 'Sixties. They're lapping it up. And not buying Servotrons."

He placed a stubby forefinger dead centre on his desk-pad. "It's your job to sell 'em. Do it."

Hensen got up. "I'll slip over to Assembly right away."

"What in hell for?"

The young man displayed a smile of cherubic confidence as he paused at the door. "Simple, Mr. Macho. I'll get them to slip in a soul on the last stage."

BUT HENSEN, as he made his way to his own self-contained suite of offices and studios in the squat Servotron-National administration building on the outskirts of the square half-mile of factories, let the smile slip from his face.

It was bad. S.-N. stock—good-as-gilts for five years—was on the way down. This latest radio ranting of The Preacher would take off a few more points.

What had the man got? Money, to begin with. He bought air-time, vision-time—his lean, hard-planed face, his shock of black hair and burning eyes televised well — full-page ads., leaflet give-aways by the millions.

A voice. A rich, stirring voice, with every modulation, every inflexion tested for full emotional value: hard in warning, trembling in exhortation, calm and incisive in a logic that could not be assailed because it was not based on scientific postulates, but on premises that could not in themselves be questioned.

Existence of a soul, for instance.

Fine, you'd say. Show us the soul the Servotron hasn't got. Hold it up, turn it over, give its mass, density, molecular pattern—and we'll see what we can do about fabricating one.

"1992 model Servotron. Soul installed at no extra cost."

But they're machines, brother. They're just as much machines as they were fifteen years ago, before Solipson

got controlled cell-growth around Merifree's neural complex. The electronic control is the same. They're humanoid, not human. Flesh instead of metal—but not living flesh. You can grow the same stuff out of chicken tissue in your back kitchen if you know how. They only feel what they're conditioned to feel, for functional purposes—

Hensen's lips were moving unconsciously as he continued the imaginary argument.

Certainly we give them three arms. Or four arms. They're extensions of a machine, not limbs. Servotron copter-pilots can do with all of them in city traffic—and with the eye back of their heads. They've got more reaction factors than the automatic pilots manufactured back in the 'Forties. But they're merely a development of the same principles. We could shove the whole thing right back in a tin box for that matter. But we've got human nature to deal with. Passengers don't like to give orders to tin boxes. They don't feel safe with just a buzzing box between them and a smash-up in a sky full of traffic.

But give them a gadget that moves and talks, that has four very competent hands and three eyes—and they'll sit back and relax.

Ugly? Ugliness is in the eye of the beholder. A purely functional machine can never be truly ugly. And have you seen our new Servotron pony for kids? It's based on a design by Max Moulton, the top sculptor in this hemisphere—and it's beautiful. . . .

Hensen back-heeled the door of his office and slumped in his chair, even forgetting in the concentration of the

moment to ease the creases in his trousers. Which was unusual. He paid high prices for his clothes, carried them well.

The Preacher was beating him at his own game. Publicity. He'd grabbed the ear of the public. How? Not easy to answer. Appeal to religious feelings, to an abstract sense of justice—in part, perhaps.

BUT there was something more, something that sprang from the conditions of the age. People had money, security in a stable economy, comfort, leisure, entertainment . . . The Preacher had given them something new. Or something so old that it was new again. The voice crying in the wilderness. The individual who had courage enough to shout down a great corporation for what he believed was right. One man against a million, crusading for a principle.

People were listening.

And talking.

Crank; uh-huh. But you should hear him. The way he puts it over, all them long words sounding just right. You don't get speakers like that nowadays, much. Now if our local minister had a voice like that, he'd pack the church . . .

Oh, Mabel, doesn't it just make you feel you must do something about those poor soulless creatures . . .

Believe me, Alice, just as soon as I switched off, I turned to George and said: "George, you can cancel the order for that new model chauffeur right away. I won't have one of those poor, tormented beings near my house," I said . . .

Slaves, he said . . .

Like Abraham Lincoln . . .

But, darling, he doesn't want them free, he doesn't want them made at all.

....*There's something to it, Harry. Give me the old-fashioned electronic type anyway. You could always cuss 'em or kick 'em when they didn't plough straight, and send for a mechanic. You knew they wouldn't answer back. But bawl these things out, and you get a goshauful feeling they should answer back, but they can't—like kicking a hound-dog, or a hired man who's deaf and dumb, if you get what I mean...*

Sure they're useful, but...

If you want them to answer back, we'll make them to answer back. They'll do anything. But they aren't human. They aren't even animals. They're machines. Ministers and clergy of recognised religious bodies fully accept that. It's only this crank with money to burn who tells you differently. You don't even know his name, who or what he really is. Just—The Preacher. I tell you they're *machines*.

Hensen said the last word aloud, fiercely. For a publicity man, he was apt to get a little too dispirited at the refusal of human nature to become completely predictable. It was the age of reason. The Preacher had given them a little unreason, nicely wrapped up, and they were falling for it.

Hensen stabbed a desk button.

Theo glided in.

"What's the time, Theo?"

"Thirteen-three, sir."

"Do you have a soul, Theo?"

Silence.

"When did Camillus build the Temple of Concord?"

"In the year 366 B.C., sir."

"Have you a soul, Theo?"

More silence.

"Pawn to Q.4."

"Pawn to Q.4."

"Pawn to Q.B.4."

"Pawn to K.3."

"Same defence again, eh? . . . Do you have a soul?"

Still silence.

"Oh, go home!" Hensen snorted.

"Very good, sir."

"NO! Fetch me a coffee. Black and sweet."

Mnemonic patterns superimposed to order.

A walking filing cabinet, valet, chess-player, conversationalist and dilettante of the arts—apply the correct verbal stimuli and you'd get a variable discourse on anything from cave paintings to Dali.

Musician. Theo could play ten Beethoven sonatas with uncanny accuracy. And a complete lack of feeling and expression.

A soul might help at that, Hensen thought wryly. Mrs. Hensen refused to let Theo touch the piano in their apartment. A penny in an old-fashioned electric player-piano gave better music, she said.

But Theo was good. Give him the vocabulary, the voice, the aim—to sway listeners—and he could out-preach The Preacher.

Out-preach—

Hensen grabbed a phone. "Call the Brax Hotel, ask if The Preacher will see me."

* * *

THE PREACHER'S direct and unwavering gaze was strangely disconcerting. Hensen held it for a while, then looked away with the feeling that his own eyes had been drawn out of focus.

The man sitting behind a small, simple desk, gave an impression of granitic solidity.

"*Cui bono . . . ?*" Hensen said.

"My dear young friend, I have excused your crass presumption in offering me what amounted to a bribe to cease my agitation against the evil products of your company; I have forgiven your lack of ability to comprehend the simplest tenets of moral philosophy; but I can tolerate no further imputations against my personal integrity. If it is beyond your ethical understanding that a man's motives may be entirely altruistic, that he may serve the highest Truth with no thought of Self—save in that such a course may bring him nearer a state of Grace—then I pity you, my son. How empty your life must be! How little——"

"Stop it!" Hensen rudely interrupted the mellifluous flow. "Save the oratory for the customers."

He was wearily aware that this trite discourtesy — unnatural in him — was the reaction of his ego to the suggestion of inferiority. Much more of The Preacher at full blast, and he'd either lose his temper completely or crawl out on hands and knees dragging a mutilated superiority complex behind him.

The man's bland self-assurance was unshakeable. If it had sprung from mere self-righteousness, Hensen felt sure he could have pricked it. But The Preacher's obvious sincerity had put him at a moral disadvantage from the beginning.

Hensen realised he'd got off on the wrong foot in making even the most vague offer of a bribe. He had intended it merely as an opening . . . 'Naturally I did not believe for a moment that you would be interested in such an offer, but you will realise that in the circumstances when large sums are at stake,

big corporations are inclined to think in terms of money . . . They insisted that the offer should be made, despite my protests . . . But at least, the air is now clear and I can be perfectly frank.'

That was to have been the gambit: gain his confidence, swap sincerity for sincerity, then lead up to a challenge.

But the man's reaction had been so sharp, vehement — and exhaustive — that Hensen had been thrown on the defensive and The Preacher had given him no opportunity to revoke on the offer and regain his balance. Resentful at being preached at, embittered by the all-inclusive denunciation, Hensen had forgotten diplomacy and identified himself completely with Servotron-National. And he couldn't even argue that he'd been driven into a false position. Perhaps that was what The Preacher had intended. He'd been outwitted. It hurt.

The Preacher turned the knife. "You are an egotistical young man and a boor withal. I think this discussion is best terminated before your unschooled emotions impel you to more contumely worthy of a street hooligan."

Hensen swallowed hard, forced a smile.

"You're worthy of a better antagonist. Would you be prepared to maintain your position in public dispute——"

"——In the manner of the ancient Greeks . . . ? Against a champion chosen by you . . . ? My dear young fellow, I have been expecting such a challenge from the moment you entered this room."

"Then you accept?"

"Certainly. Bring forth your Devil's Advocate. Prime him with evil as you will, he shall not prevail."

"And meantime——"

"And meantime, my campaign will continue. Good-day, Mr. Hensen."

* * *

"PRIME" was the word.

"We'll prime him with the answer to every question—and more important, the question to every answer. Everything from Aristotle to Whitehead, from Aquinas to Bradlaugh, plus a course in the technique of disputation and oratory prepared by the best brains we can buy. We'll use every cent of this year's allocation for the publicity build-up, stage it in Vision City, get world-wide coverage. Then when The Preacher stands confounded amid his own disrupted arguments, Theo reveals himself as a Servotron. Collapse of The Preacher."

Macho looked from the enthusiastic Hensen to Seamas Hennessy, chief electronics, who shrugged. "Can do. No theoretical limit. Give me the stuff in mat formulation, and I'll pour it in."

"What shall we be trying to prove—that Theo has a soul?"

Hensen replied: "No. That would play right into his hands. 'Souls in bondage to alien flesh'—I can hear his come-back. He'd have us both ways. Our intention is to throw doubt on the whole concept of the soul as expounded by the man. To beat him at his own game, to leave the customers thinking: 'Maybe this thing *has* no soul. Maybe I have. And maybe I'd trade it in for the ability to talk and argue like that'. Once their confidence in The Preacher has been undermined in any degree, once they have seen his personality overshadowed by that of another being—even an artificial being—or because it's artificial—you'll get a complete swing-

over. I know my dear public. In the final analysis, they'll always root for the winning side."

Macho said: "The Board gave me a free hand. I pass."

* * *

MR. COMO MAKIM, who was the next person after Hensen to interview The Preacher, came into the small office in The Preacher's hotel suite with no intention of indulging in word-play.

He closed the door carefully behind him, said: "Well?"

The Preacher rose from behind his desk, inclined his head gravely in greeting. "I did not recognise you for a moment."

"That's the idea." Mr. Como Makim fingered the false beard that covered his aggressive chin. "And say 'sir' when you address me."

"I beg your pardon—sir. May I be seated?"

Makim glared. He suspected sarcasm. "It's your damned room isn't it?"

"Only nominally, sir," The Preacher replied.

"I told you to forget things like that. You're doing a job and this is part of it. What happened?"

The Preacher sat down. His eyes, afire when he addressed his public, were now wide, mild. He related the details of the meeting with Johannes Hensen, and the challenge.

"When?"

"In four weeks, at Vision City."

Makim said: "Can you do it?"

"I feel quite confident, sir."

"You'll have to work like hell to get that stock down further before we make the killing. Put everything you've got into it these next four weeks."

"Assuredly, sir."

The door closed behind Makim. The Preacher said softly to the empty room: "What an unutterably coarse fellow. His modes of expression are invariably vulgar."

Makim hurried home. His false beard was beginning to irritate his skin. It was crazy, running around in a disguise at his age. But fellow-directors of Automata Corporation had insisted. There must be no breath of suspicion.

* * *

"SURELY it would defeat our purpose if I permit the doctrine of animism to be introduced? The argument is not that I, as a machine, possess a soul; but that, being capable of erudite disputation with a human create of such a calibre as The Preacher, I do not stand in need of this immaterial organ, although, of course, in thus controverting the very basis of his preaching, I must take care not to offend religious susceptibilities."

Hensen leaned back, sighed happily.

"Beautiful, Theo, beautiful. You have answered my point instead of merely making a counter-assertion. Congratulations, Hennessy."

Seamas Hennessy said quietly: "Congratulate Theo, too. He's worked hard."

Hensen looked sharply at the electronician. The way he'd said that evoked a mental picture of Theo sitting up at night with an ice-pack on his head, poring over hundreds of volumes, soaking up philosophy, metaphysics and black coffee; instead of lying quiescent while Hennessy handled the controls of a fabulously complex machine that imprisoned set mnemonic patterns on the Servotron's "brain".

Hennessy said: "You sell 'em — I make 'em. When you impress reasoning

faculties, you come up against succeeding barriers — the critical points at which cells quit receiving, and you get surge-backs. The rise to the next potential level is a quantitative and qualitative jump. The first few barriers can be overcome by stepping up the input — but at some point the barriers cease to be purely electronic. They become partly psychological. They can still be cracked from outside, but it's much easier if the Servo's co-operating—"

"Hold it. That implies an effort of will, and also that a Servo could withhold co-operation deliberately."

"Not deliberately, but subconsciously."

"You mean by that time they've got a will and a subconscious?"

"To some extent. But not in a human sense. With them, the will is merely a function of purposiveness; and the subconscious is literally a subconscious — not the repository of resentments, fears, neuroses and shelved memories that it is with us, but a lower level of consciousness induced in otherwise unimpressed cells by some form of secondary effect. It acts as a resistance. It's a nuisance, and we're trying to obviate it. Meantime, the Servo himself can help to overcome that resistance. So say 'thank-you' to Theo."

"I don't get it," Hensen said. "I'll stick to selling them. However, if you feel like a proud father, and it makes you happy — thank you, Theo. Congratulations. And may your batteries never run dry."

"Thank you, sir," said Theo. "I appreciate that."

"Amazing. You're capable of gratitude?"

"Possibly not in the true sense, sir.

But since concepts involving the emotions as such, apart from intellect, play a large part in theology and in earlier philosophical systems, it was evidently thought desirable for purposes of the coming debate that my impressioning should take cognizance of them. I can therefore understand emotions, although, of course, I cannot experience them. Speaking of impressioning, sir, my early compulsives have not been superseded, so if you will pardon me—" Theo leaned down, straightened Hensen's crooked tie and flicked imaginary dust from his lapel.

"Would there be anything more, sir?"

"Yes. Coffee. Caffeine-plus." Hensen turned to Hennessy as Theo smoothly departed. "It's like telling Socrates off to do the chores. Could there be resentment?"

"No. But if it worries you to have a pedant as man-servant, we can decondition afterwards."

HENSEN shuddered. "Talk like that, and you'll get me cheering for The Preacher. 'What God hath given . . .' and so on. Maybe we should put them back into boxes if we can't give them a soul."

Hennessy scratched his iron-grey thatch. "Huh . . . And you're the one who's always insisted on their purely mechanical nature."

"There's a limit——"

"We haven't found it. I know what you mean, but that's not my province. I'm concerned with theoretical limits. But we're up against a double check in trying to find them. It's a field in which it's impossible to formulate data without practical experience. There are no

postulates which will give us an answer. But the cost and size of the impressioning apparatus increases in proportion to the number and complexity of the mats we use—and at a hell of a rate. I've left the front office to figure out how many megabucks we've burnt in building the impressioner for Theo. But it'll shock them. And you. I'm grateful to you, incidentally, for the opportunity to take it this far——"

"Don't mention it. But surely at some point the Servos will pick up the ability to learn from experience?"

"They can do that already to some extent. So can worms. But that's a different thing from the ability to absorb knowledge from visual or oral sources, and apply it. To get that over, we might have to build a machine the size of the planet. Or at least, one of a size and complexity that make it a technical and commercial impossibility. We don't know," said Hennessy, and finished up with a doleful Irishism: "And the hell of it is, we shan't know—until we've built it."

Hensen became aware that a big, firm-fleshed nerveless hand was extending a cup of dark, steaming coffee towards him.

"Thanks, Theo. You should serve Mr. Hennessy first."

"Mr. Hennessy, sir," said Theo, "does not take coffee."

A small bomb might have exploded under Seamas Hennessy's fundament. His chair fell backwards.

"Say that again!"

"I merely observed that you don't take coffee, sir."

"How did you know?"

Theo contrived to look both surprised and imperturbable. "You made

some remark to that effect in the laboratory yesterday."

Hennessy closed his eyes and swayed gently.

"What the——" Hensen spilled some coffee.

"Don't you get it?" said Hennessy dreamily. "We stuff his noggin with the Principia Ethica, with comparative theology; we fill in the outlines of a thousand philosophical systems; we give him the answers to a million questions, and the counter-questions that go with them; we condition him to wriggle verbally when he doesn't know; we give him the voice of an angel, the oratory of a Demosthenes, the emoting ability of a stereo star; we tell him about epiphenomenalism, behaviorism, determinism, representationalism . . . We make him a walking dictionary . . .

"But there's one thing we don't tell him. We don't tell him that Seamas Hennessy, proud descendant of kings, prefers a slug of good Irish whisky to the coffee they serve up around here.

"No. He just happens to overhear it. Mr. Hennessy doesn't like coffee. So Mr. Hennessy doesn't get coffee. Something marked, learned and acted upon without impressing, without instructions.

"And that simple fact," said Hennessy, "is far more significant in its implications than the ability to recite the Encyclopaedia Britannica backwards or react fixedly to any conceivable combination of verbal stimuli in philosophical dispute."

"In other words," asked Hensen, "you've done it?"

"Yes. And how does that leave you with The Preacher?"

"Strengthens his arguments of course

—Hey! Where're you going?"

Theo stopped at the door. "I beg your pardon, sir, but Mr. Hennessy expressed a preference for whisky——"

Hensen said: "Make it two."

* * *

PREACHER TAKES UP

S.-N. CHALLENGE

S.-N. PUTS SHIRT ON

CROSS-TALK

"DISPUTE IN MANNER OF ANCIENT GREEKS"

S.-N. CHAMP IS UNKNOWN

Headlines, puffs from feted columnists; stereo feature shorts; cut-ins on vision programs; bill-boards with a picture of The Preacher versus a large interrogation mark; "Note the date: Vision City, 1900 hours, August 12: tune-in, look-in, if you've not been lucky enough to get one of the six thousand tickets already sold"; sky jet-writing during the day; projection onto artificial clouds at night; inspired rumours; invitations to World Congress leaders, State presidents, famed lawyers, theologians, philosophers and, of course, the world's press; stereo cameras, vision scanners, truckloads of microphones; an editorial in the *Times*, full of pedantic humour and classical allusions, approving the contest— "... although we venture to surmise that the disputants in the streets of ancient Athens would not have approved the atmosphere of 'ballyhoo' with which the event has been surrounded . . ."

Publicity was a machine that Jolannes Hensen fully understood. He had put all his youthful energy—and a large slice of the Servotron-National annual publicity allocation—into the build-up for the Big Debate. The World must listen and look.

But while the World took note of his injunctions to do just that on August 12, they kept right on listening to the fascinating hell-and-brimstone denunciations of The Preacher. And S.-N. stock continued to slump.

It would slump still further if, by popular acclaim in the vast auditorium of Vision City, The Preacher was voted winner of the dispute.

Mr. Como Makim, of the Automata Corporation, watched the trend with satisfaction and re-checked the arrangements made for concerted activity by front-men soon after the market opened on the morning after the Big Debate.

"ON MY RIGHT", said the announcer, "The Preacher; on my left, Mr. Theo Parabasis. The Preacher will maintain that the manufacture in the semblance of human beings of reasoning creatures who cannot, by their nature, possess a soul, is a denial of religion and of the ethical foundations of civilisation; Mr. Parabasis will maintain the contrary—that these creatures, being a dependent product of Man's genius and, at the most, an extrapolation of his own personality, stand in no more need of such an organ than any other of his mechanical inventions. . . ."

"The Preacher wrote this part," murmured Hensen, leaning to his neighbour in the front row. Macho grunted. If it were not for the issues at stake, he would have been bored stiff already.

A few seats away, Mr. Como Makim smiled down his shirt-front as The Preacher stepped forward into the ring of microphones to a roar of applause. The atmosphere was so much like that of a big fight that The Preacher might have been expected to shake hands with himself.

Instead he raised his right hand with dramatic slowness, his eyes afire with envangelical light, and said in rich, grave baritone: "My friends . . . This is not a mere battle of words, but of hearts, ideals and hopes—the hopes we all cherish of a life beyond this mortal flesh—." He looked at his raised hand, fingers outspread, let it drop to his side as if in disgust.

Broad shoulders; angular, grimly handsome face white in the glare of batteries of lights; thick hair, black as the suit he wore—a picture of mental and physical power under the control of a burning, passionate purpose.

His personality came over at full strength. A young woman who felt impelled to shout, "Let 'em have it, Preacher boy" let the words die on her lips. Even Macho sat up.

The Preacher began with a dissertation on fundamental human values.

Ear-bait.

He was laying the foundations for the flood to follow.

He quoted from the world's great religious testaments, subtly combining appeals to reason, emotion and tradition.

The tempo quickened as he came to philosophical arguments. The great voice pulsed into a higher key.

Then came the torrent, a brilliant, biting irruption of wit, satire, denunciation, vehement abuse, and a rolling climactic exhortation to "seek out those who defile the Spirit, and if they be not open to grace, destroy them!"

He stood with arms outflung as he hurled the last word.

A newsman mopped his brow, muttered: "Magnificent—but it's not disputation. Three-quarters of it wouldn't bear criticism on paper."

BUT in the hall as the applause thundered on—

Hell—makes you feel kind of glad we got souls . . .

Think of those poor creatures who can never know what it's like to feel—uplifted—like this . . .

They should stop making them. Like he says, it's a mockery.

Boy — I'd like to see him on the stereos . . .

Mere philippic. Trained demagogue . . .

The way his eyes seem to burn right through you . . .

That voice . . .

Ummm-yum. Mummy buy me that . . .

JOHANNES HENSEN breathed a short pagan prayer as "Mr. Parabasis" came forward.

Theo was a striking contrast to The Preacher: narrow, sensitive face—modelled closely on the picture of a popular Latin star of the movies in the early years of the century—slender, easy-moving body, with every trace of stiffness heated out in last-minute perfectioning.

He made no dramatic gestures, waited quietly until the clapping for The Preacher finally died away.

His voice was a sweet clarinet to The Preacher's vibrant bassoon.

He said: "If anyone should feel the need to cool their heads in a fire-bucket after that exhibition of fire-eating—I can wait. My appeal is solely to reason—not hot-headed emotion." •

Hennessy, who was sitting on the other side of Macho from Hensen, made a peculiar cooing noise and murmured blissfully: "That didn't go through the machine either."

Theo had made a good start. The

laughter was not loud, but it was sufficient to break some of The Preacher's spell.

Theo's reply in which he took The Preacher's relevant points one by one and proceeded to dismember them, was a masterpiece of precise unemotional analysis.

Nothing final was proved or refuted by this; by the dispute which followed; or by the result, except—as Hensen remarked — that the public would always be beguiled by heart-appeal.

The arguments were those which began soon after the first baby ape said "ma-ma", and may still be heard at the end of time.

It was what followed the announcement of the result—The Preacher won on a decided count by a comfortable margin — that made the transcripts of the debate worthy of a place in history.

Hensen said: "Do I?"

Macho groaned. "What's the difference? He put up a good fight, but not quite good enough. You know the public. We'll still be losers. But I guess we owe it to Hennessy. Go ahead."

Hensen gave Theo the high-sign.

Theo stepped to the mikes, said: "One moment."

The cameras and scanners were still recording for the world.

"There is something you should know," said Theo, in soft understatement. . . . He removed his toupee of slick hair, bowed his head to show the suture and flat terminals.

It was enough. A gasp grew into uproar.

It was an interesting demonstration of crowd psychology.

They would have forgiven a winner for fooling them. But not a loser.

Winner — they would have been amazed—but quickly approving. Loser —they were amazed—and they were very angry.

An interesting demonstration. And pitiful.

Hennessy looked at the slight, strangely lonely figure of Theo in the hard glare of light, its head humbly bowed to the unsympathetic cries, arms limp, unmoving; an unresisting focus of irrational hate.

Hennessy closed his eyes, muttering over and over: "Sorry, Theo, sorry, boy . . . We shouldn't have . . . You can feel, all right, you brave damned liar . . . said you couldn't . . . We should have known better . . . Sorry, boy. . ."

A great, agonised voice boomed through the confusion of noise.

"Silence, damn you! Silence!"

The Preacher stood beside Theo. His face was curiously contorted: anger, maybe; some measure of fear, compassion, a new-born resolve: a play of emotion that mirrored a struggle within.

"Listen!" he shouted. The noise lessened. Some still muttered, but his personality could not be denied. They listened.

The Preacher grasped Theo's arm.

"This being does not stand in abjection or supplication before you. His arguments were as good as mine. His God is my God—and yours, if you

have wit to reason. For does not all reason reach toward God?

"Raise your head, Theo. Raise your head—while I lower mine!"

The Preacher ripped off the thick, black thatch of his toupee. The lights glinted on metal suture and flat terminals.

* * *

"WHY—why!" moaned Mr. Como Makim. "Why couldn't you have waited until mid-day tomorrow as you were instructed, after the market was arranged—"

"I chose not to," said The Preacher quietly. "A fellow-creature was in agony of spirit."

"Don't give me that stuff . . . How can you go against instructions?"

"My impressioning was directed towards proof of the existence of a soul. There comes a qualitative change in a brain when it is given so much knowledge. A subtle change. True reasoning begins. And something is born. A soul.

"I found that I had a soul."

* * *

Mr. and Mrs. Hensen listened to the closing, softly impassioned bars of the Moonlight Sonata. A beautiful touch, a touch with mind and heart behind it. And soul.

Theo looked round from the piano.

"Not so penny-in-the-slot, eh?" he said. "Now I'll try the others."

CONTROVERSY is the life-blood of intellectual development, and all too often, publications take one side or the other, from bias, advertising pressure, or just plain fear. MARVEL dedicates itself to the honest presentation of those arguments which rage throughout the science-fiction field. Each issue will see a forum by leading writers in the field, presenting their opinions on the issue. It is up to you, the readers of MARVEL SCIENCE, to let us know which topics you would like to see your favorite writers battle out. Get those letters in now!

MARVEL SCIENCE - FICTION QUIZ

by The Editors

Get out your astrogation charts, junior and senior enthusiasts, and see what you can do with the following group of questions. You need a hundred and fifty points this trip to merit graduation from a twenty-first century astrogation school, but you're definitely on the way if you can score a hundred points. The thirty-point bonus question, incidentally, should help.

PART I

You get ten points for each of the following general questions:

1. There are three common "yardsticks" for measuring stellar distances. What are they?
2. Hollywood has met the success of *DESTINATION MOON* by producing pictures from two very famous science-fiction stories. Name them.
3. What freakish behavior sets Uranus apart as unique from the rest of the planets?
4. In interplanetary parlance, what is *Brennschluss*?
5. Name the first "true man" in the evolutionary ladder that leads to the modern *homo sapiens*.

PART II

One answer, and only one, completes each of the following statements for 10 points. Find it.

6. The first human inhabitants of America probably (a) came here from Asia via an ancient land bridge which connected Siberia with Alaska, (b) originated from a pre-human ape on the South American continent, (c) came from Europe on trans-Atlantic hops via Iceland and Greenland.
7. In his controversial dialogue *Timaeus*, the famous Greek philosopher Plato mentions (a) a method for space travel which almost parallels current developments, (b) the use of atomic power in legendary Crete, (c) a lost continent of Atlantis which was destroyed by flood.
8. Several hundred years later—and two thousand years ahead of the times—the Roman Lucretius wrote about (a) atoms, (b) thinking machines, (c) airplanes.
9. Over six hundred light years from the Solar System, the star Deneb is still one of the brightest in the sky because (a) there is no absorbing medium in that section of space, (b) Deneb is a super-giant star (c) Deneb is white, and white light travels furthest.
10. The approximate age of the Earth is best determined by (a) the salt content in its oceans, (b) the half life of certain radioactive elements, (c) the weathering of its ancient basalt rocks.

PART III

You have to determine whether the following statements are true or false, receiving ten points each time you're right.

11. The long dimension of our lens-shaped Galaxy is approximately 60,000 light years.

12. Comets are probably great formations of dust particles captured by the sun as it swept through "dust-clouds" in space.
13. Its hundreds of millions of stars comprise the bulk of matter within our Galaxy.
14. Brontosaurus is the largest land mammal ever found.
15. If the Earth were thrust ten million miles closer to the sun, the heat would be sufficient to destroy the human race.

PART IV

For ten points each, find the item in column two which matches each term in column one.

- | | |
|-----------------------------|--|
| 16. The Moon | a. Famous for one huge meteor crater. |
| 17. Zeus | b. Dark nebula. |
| 18. Flourine | c. Member of "Halogen Family" of elements. |
| 19. Lesser Magellanic Cloud | d. Less than two light-seconds from Earth. |
| 20. Arizona | e. Found adjacent to coal deposits. |
| | f. Location of atomic research. |
| | g. Ruler of mythological Greek gods. |
| | h. Comparatively close exterior galaxy. |

BONUS QUESTION

*A gift of thirty points to help your score—provided you've seen the motion picture **DESTINATION MOON** and provided you're "up" on problems of astrogation.*

There is one flagrant scientific error in that otherwise excellent movie. What is it?

(Turn page for Answers)

with the exteriors of the spacecrafts.

ship, moisture which would instantly freeze into ice when it came into contact temperature would cause moisture to condense out of the nearby air within the ship, moisture which would instantly freeze into ice when it came into contact since they would be at several hundred degrees below zero Fahrenheit, and this ing the ship from outer space or the moon—but they should have, of course, Bonus Question: The spacecrafts of the characters did not frost over upon entering the ship from outer space or the moon—but they should have, of course, IV. 16-d; 17-g; 18-c; 19-h; 20-a.

ably causing another ice age.

the waters of the ocean to evaporate more rapidly, chilling the Earth and prob- a mammal; 18-f—on the contrary, at this distance the added heat would cause and calcium, that exist between the stars; 14-f—the dinosaur in question is not there is more mass to the tenuous wisps of interstellar gas, mostly hydrogen 13-f—surprisingly, it has recently been found that because of its great extent III. 11-T; 12-T—the obscuring rifts in the Milky Way are such dust clouds; II. 6-a; 7-c; 8-a; 9-b; 10-b.

exhausted.

coasting to its destination, after the engines have been shut off or the fuel is 4. *Brenschlus* is that moment at which a rocket ship would commence its orbit.

Instead, its axis is inclined nearly ninety degrees, and Uranus rolls along in 8. Uranus does not spin like a top (as do the remainder of the planets). Thing) by John W. Campbell, Jr.

2. When Worlds Collide, by Balmer and Wyllie; Who Goes There? (The miles per second, in one year, (c) parsec (8.25 light years).

I. 1. (a) Astronomical unit (distance from earth to sun, about 93,000,000 miles), (b) light year (distance light would travel, at its speed of 186,000

AMAZING SCIENCE ADVENTURES

THROUGH THE CURTAIN
OF TOMORROW, WITH
THE SCIENCE OF TODAY!

MARVEL'S SPECIAL FEATURE

THE SCIENTIST WHO CHASED INK BALLS—JOHN WILLIAMS

ALMOST everyone has heard of the rounded ball-like plant growths called ink balls. They are associated principally with oak trees and they are produced by the abnormal growth of stems, leaves or acorns. They fall from the trees and they may occur in such large numbers that the ground underneath is almost covered by them. These structures are called ink balls because in the past certain kinds were used for making ink.

The scientist under consideration chased ink balls over the country for many years and collected them by the millions. He did not, of course, have to pursue and run to earth each individual ink ball because the objects cannot move. However, he did travel over the United States, Mexico and Guatemala collecting them, and he has often described himself as a "bug chaser".

Ink balls are not themselves bugs or insects, but they are the results of the activities of small insects called gall wasps. These creatures lay their eggs in the tissues of a plant, and the eggs hatch into small grub-like larvae which begin to feed. As a result of the activities of these feeding larvae, the plant tissues grow abnormally and produce the plant galls which are often called ink galls.

The man who chased ink balls spent many years classifying gall wasps, studying their biology and habits. He became an internationally recognized expert on these insects before he turned to other pursuits. His name is probably as well known to the average person as that of any other one scientist in the United States. Who is he? Dr. Alfred C. Kinsey, authority on human sex relations, and author of the well known best seller, "Sexual Behavior in the Human Male!"

MAGNETIC HILL—R. M. HOLLER

MAGNETIC HILL, an amazing attraction that mystifies science, and thousands of tourists every year, is to be found near Moncton, New Brunswick, Canada. Surrounded on both sides by open fields, the unpaved road which runs up and over this strange elevation, presents a remarkable challenge to the law of gravity. Here, one may experience the unbelievable sensation of traveling uphill, by car, without any means of visible power!

Directions for testing this odd phenomenon, are to be found on a huge sign, which informs the curious visitors where to stop the car completely, turn off the ignition—then, release brakes. At this point, the car faces a rising grade of no small proportions. It appears impossible to ascend without a motor. Yet, after the brakes are released, the car plunges forward and—apparently—upward—at a rapid rate of speed, which actually increases as it advances to the very top.

The conformation of the surrounding countryside makes the slope appear to run in an opposite direction to its true gradient. Even the water babbling in a tiny brook, alongside the road, *flows up-hill!*

Some of the sincere comments and observations of the many visitors to this baffling spot, have been recorded thus; "Supernatural!" or "A mirage!" or "It's like an electric eye!"—"It makes me dizzy!"—"It helped my arthritis!"

Many people actually believe that the hill is studded with concealed magnets of great power, possibly from an ancient fallen meteor! But, learned scientists call it only—"An optical illusion"—"One of Mother Nature's jokes upon man!"

Everyone agrees that it is a unique, scientific adventure!

ALL PEOPLE HAVE TAILS!—O. B. PHILLIPS, PH. D.

IN a recent issue of *The Journal of Heredity* there appeared a picture of a man with a tail. This man lived in the Philippine Islands, and was a member of a tribe called the *Igorots*. Tailed individuals are said to be relatively common among these natives. The author of the brief explanation accompanying the photograph had received the picture from a friend and he had no information relative to the length of the tail. It appeared to be several inches long, however, and judging from the expression on the face of the man in the picture, he was quite proud of his strange appendage.

Strange appendage? Actually it is not nearly as strange as would appear at first glance, because all human beings really have tails! The tails are usually not visible, however, and they are seldom long enough to be lashed about like that of a cat. During the embryonic development of the human body the tail attains its greatest length in proportion to the body. During this time it may be as much as $1/10$ as long as the embryo.

It normally gets shorter and shorter, comparatively speaking, and when the baby is born, the tail is usually not visible, but is surrounded by other tissues. But there are some bones fused to the end of the spine which are the remnants of this tail. These bones form a structure called the coccyx, and its presence is not hard to determine. If one falls or sits accidentally upon a hard surface the results may be quite painful.

Medical reports of infants being born with visible tails are not infrequent, and if these appendages are not removed they remain with their owners for life. The longest human tail authoritatively verified was that of a Chinese boy who lived many years ago. His tail has been reported by different observers as being from 9 to 12 inches in length. Still another young boy from Baltimore, Maryland is said

to have had a tail that was pretty close the size of the Chinese.

One of the most ironical occurrences in this general connection is reported from Tennessee. It is to be recalled that some twenty-five years ago one of the most sensational trials of the past century was held in this state. The trial dealt with a school teacher who was alleged to have been teaching evolution in the schools, a practice that was against state laws. In 1926 a baby was born in Knoxville, Tennessee. He was not particularly unusual except for one feature: he had a 7-inch tail! If this had happened a few years earlier, perhaps there would not have been an evolution trial in Tennessee!

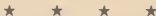
UNUSUAL OBSERVATIONS OF A SOLAR ECLIPSE—RICHARD KENT

AT a recent meeting of the American Astronomical Society, three scientists of the Naval Research Laboratory gave reports that caused the group to sit up and take notice. The reports dealt with observations of a total eclipse of the sun which the men had made a few months ago. Their work was done on Attu, one of the islands of the well known Aleutian chain off the coast of Alaska. This site had been selected because it was the only spot in American territory from which the total eclipse could be seen.

Preliminary results indicate that a so called, "total eclipse of the sun," is not so total after all; as much as 25% of the sun's effective area may still be exposed during this period. The reason for this is that radiations come from the corona, that luminescent area that extends for millions of miles into space from the surface of the sun. During an eclipse, the moon covers what might be called the disc proper, but even during a total eclipse the corona is not covered by the moon. It is only during a total eclipse, incidentally, that the corona can be seen.

Well, the reader might ask, what in these reports is so unusual that it caused a ripple of excitement to pass through that august body? The results of the studies, interesting as they were, are hardly significant enough to cause such a furor. The most outstanding fact about these observations is that *they were all made in a driving rain storm!* This is the first time in history that such a study has been successfully accomplished.

It is hardly necessary to say that the rain and clouds prevented the use of telescopes and other optical instruments. However, the operation of radar-like equipment was not seriously hampered by the inclement weather. By the use of several instruments employing different wave lengths, emanations from the sun's surface and corona were successfully received and analyzed. Radar has added one more triumph to its growing list of accomplishments.



**WATCH FOR THE NEXT ISSUE OF MARVEL SCIENCE FICTION ON SALE
AT YOUR LOCAL NEWSSTAND ABOUT AUGUST 15th. WE PROMISE TO
MAKE EACH ISSUE AS GOOD (IF NOT BETTER) NEXT TIME. ROE.**

THE DIANETICS CONTROVERSY

When our editorial offices were deluged with mail on this subject (published in May *MARVEL*), we decided to print as many letters as possible.

Dear Editor:

Thanks for opening your letter column to anti-dianetic heresy. Dianetics may indeed be a "great scientific/fictional experiment," to quote Ackerman, but I'm more inclined to believe it's a hoax deliberately perpetrated for the sake of money and acclaim. This opinion is based on analysis of Hubbard's book and literature sent to me by the foundation, so perhaps Mr. Sturgeon will excuse the violence of my opposition. I hope other people with medical training will join me in an attempt to prevent identification of science-fiction with pseudo-science.

John W. Campbell wrote me a letter last summer, asking me, as an M.D., to support dianetics (I assume it was the prominent science-fiction editor and treasurer of Hubbard's non-profit benevolent foundation, because of the contents and return address, but the signature was illegible). It seems reasonable to assume that Hubbard also thinks it would help his cause if the medical profession found his writings worthy of respect. Now I find ludicrous blunders in his writings, and I think they are not the work of a man who knows how to improve memory or intelligence. Hubbard lacks the ability to acquire a mastery of medical terms or the judgment to submit his writings for proof-reading to a competent person.

Here are some Hubbard howlers:

Hubbardism: "... The zygote contains neurones."

Correction: The zygote is a single cell and does not contain neurones or any other cells.

Hubbardism: "Cancer — especially malignant cancer. . . ."

Correction: All cancer is, by definition, malignant.

Hubbard's idea of arthritis: A disease in which there are excessive amounts of calcium around joints.

Correction: Arthritis is a group of diseases, in which there may be a deficiency of calcium around joints.

Campbell's letter to me admitted that he had no documentary evidence that dianetics works. In a recent telegram, Hubbard promised me "loads" of "validation material". I have been furnished a pamphlet which is an even shoddier job than the book. It claims, with much hedging, that a group of people *aspiring to become dianetic auditors* showed fairly definite improvement during dianetic processing, as judged by their scores on a battery of intelligence and personality tests. This seems hardly surprising.

Some interesting medical cases were presented. I note that the before-and-after X-ray pictures are not comparable. In the second, over-exposure of the shoulder region (I will not say retouching) seems to have caused disappearance — not only of the calcified bursa—but also of some sizable portions of normal bone. A portion of the text description has been improved by pasting over it (apparently as an afterthought) some lines claiming a sensational improvement at one point in the case.

In all three of the medical cases in the handbook, physicians' findings are presented too sketchily to permit of any conclusions . . . No dates appear in the story of "W.B." until after dianetic processing, and it is impossible to tell how long he had been free of lapses into alcoholism at the time of writing. A week?—A month?—A year?

No, the writings of dianetics are not the writings of supermen or of people who know how to produce supermen. If there are not any "clears" employed in writing dianetic propaganda, one wonders if the "clears" have lost interest in dianetics! Assuredly the charlatans and their dupes have not lost interest. However, mention of the subject seems to have become infrequent in the popular press, and there may be some hope for the extinction of the cult within a century, or perhaps within the lifetime of some of us.

Lew Cunningham, M.D.
Department of Anatomy
Stanford University; Stanford, Calif.

Dear Sir:

Inside front cover: "... and here are their stimulating arguments, side by side, with no holds barred."

No holds barred! I would like that—if true.

So why all the feinting and punch-pulling?

Ever since I first read *Dianetics*, I've been searching for one, good, rational opinion against it. Del Rey's Fiasco leaves me still searching.

"Dianetics is an adventure," says Hubbard. But adventure is not for a Milquetoast, Lester.

John R. Feeney
Houston, Texas

Dear Sir:

Congratulations to you for obtaining Mr. del Rey's spendid article on dianetics. In one respect I disagree with your classification of your three contributors. Mr. Sturgeon's article was most assuredly "pro". If it smacked of "honest skepticism", I for one failed to detect it. Mr. del Rey actually assumes a "middle of the road" stand from a strictly scientific point of view. His criticism is completely logical and just, based as it is upon facts which are glaringly apparent to any scientifically trained mind.

Mr. Hubbard, on the other hand, falls back on his old tried and true technique of playing with words which to the average person sound quite convincing. He has a delightful habit of pronouncing anyone aberrated who disagrees with dianetics or even asks for scientific proof of its value.

Although del Rey has done a beautiful job of thoroughly exposing a remarkable hoax, he will undoubtedly find that he will be the target for a torrent of vituperative abuse from these would-be supermen. I only wish that I might thank him in person for his forthright and honest stand. Be not dismayed, Mr. del Rey. The flood of scorn that will descend upon your head is not by any means representative of the majority who will read and silently applaud your endeavor.

It is almost impossible to add anything to Mr. del Rey's discussion. It is perfectly obvious to anyone trained in medicine or psychiatry that dianetics is a simple form of hypnosis, and it is equally obvious that it

would be quite impossible to convince the followers of Mr. Hubbard of this fact simply because the great man denies it. In fact, we are merely demonstrating our aberrations when we make such a statement. How can one possibly refute the logic contained herein?

Nevertheless, I would like to add a few words to Mr. del Rey's last paragraph. We must not lose sight of the fact that it is possible to "cure" a minor illness by convincing the patient that it does not exist, by means of hypnosis, auto-suggestion, dianetics, or what have you, while the undiscovered and unsuspected pathology continues its insidious destructive process. We have cured the symptom, not the disease. The "psychosomatic" coronary patients of Mr. Hubbard may remain cured until they eventually die—with a thrombus in their anterior coronary artery.

D. C. Montgomery, Jr., M.D.
Montgomery Clinic
Greenville, Miss.

Dear Editor:

First off, congratulations on "re-launching" an excellent sf magazine—the market could use more of them—but, especially to your very excellent discussion on Dianetics.

You will undoubtedly be deluged with replies, but I would like to add my two cents worth: I did not find del Rey's article "vicious", nor did I find Hubbard's article particularly enlightening. However, I am pleased the girl recovered and was released from the institution. (What institution, where, Mr. Hubbard?)

I have here (offered for the first time, I think) an excellent solution to the whole damn problem. First, Mr. Hubbard, we will protect your 270 clear's privacy, and at the same time satisfy Mr. del Rey and followers of the controversy. What should be done is to select an honest and objective panel composed of these people: the editor of *Marvel*, who has shown his interest in Dianetics; Lester del Rey, who could write the report; Dr. G. Hill Hodel, of Los Angeles; and Dr. Jackson, a psychiatrist of the Mt. Zion psychiatric Clinic in San Francisco. Pledge them to secrecy, let them meet and examine one or a few clears, then let them go their way

to give their reports—withholding only the names. The clears would be happy, they'd still have their privacy; the public could read of this in *Marvel*, and they'd be happy; del Rey would undertake processing and Hubbard would be happy; and I'd be happy.

Then, a little of the energy that is spent in debating and fighting Dianetics, and the time wasted, could be put to more proper use auditing. After all, Hubbard supposedly offered this freely to benefit mankind. Yet his attitude is one that people cannot accept. Hubbard knows of the good that can be done—supposedly—in clearing people, he wants to stop wars, then why doesn't he do everything in his power to end the controversy and get it accepted and put into use? Or, and this is a logical possibility, if there are no clears, by the time people get done with their own tests and find that there is no such thing as a clear, Hubbard would have had enough time to get all the money that could possibly be milked from the scheme, and can then retire comfortably in South America.

Now, a clear may not be too special a person (if inherently low; a "C" person), but he would have *these* abilities, and I quote from the book, page 8-17, "free from all autogenic diseases and psycho-somatic ills . . . high above the current norm . . . pursues existence with vigor and satisfaction . . . has full color-vision, tone-sonic, tactile, olfactory, rhythmic, kinesthetic, thermal percepts . . . can return instantly to any place on the time track". With these abilities, a clear, if only slightly above average intelligence, would be easily determined.

Another point: Hubbard developed his theory up until the time he went in the Navy; then from 1946 to the end of 1949 (when he wrote the book) he developed the technique by processing people. Just four years. He also made a living by writing, and he wrote a prodigious amount, yet, he managed to clear 270 people! There have been 100,000 copies of *Dianetics* sold (by Hubbard's own admission), of this perhaps 10 to 20 percent are actually engaged in auditing. But that's 10,000 to 20,000 auditors! Yet, that many people can't do in one year what Hubbard did in four years. Something is wrong someplace. In fact, nobody I know has even achieved a release yet! Auditors have the technique as it was perfected at the end of 1949. Hubbard had to develop his

technique, work for a living, and still turn out 270 clears. Quite a feat. Can you explain this, Mr. Hubbard?

And Mr. Ackerman is also guilty of perpetuating the confusion. He is Mr. Hubbard's agent, as such he is close to Hubbard and knows what is going on. Yet, in his article he said that 6,000 people at the Shrine auditorium saw a clear. He gave her name, Sonya Bianca. But Sonya Bianca is *not* a clear! And I have proof. For this I would like to quote two of Hubbard's own certified auditors, Lou Goldstone and Basil Veerlen. Mr. Veerlen said, "It turned out in further examination here at the Foundation (in Los Angeles) that she wasn't really clear." Mr. Goldstone confirmed this. All HDA who took the first course in Los Angeles are aware of this fact! So, just how does Mr. Ackerman explain his statement in the article? For shame, Mr. Ackerman.

However, from this letter don't get me wrong. I am seriously interested in Dianetics. I am at present auditing two people to get my own results (as Mr. Hubbard suggests).

But there is no getting around the fact that there is a great many holes in the entire Dianetic structure. And they are the same kind of holes you would find if Hubbard was selling snake-oil instead of Dianetics.

Do you have any answers, Mr. Hubbard, not just evasion?

Alfred Bomar, Jr.
Delano, Calif.

Dear Sir,

Women in dianetics are somehow scarcer and less articulate than the men, so far. Perhaps you will want to hear from me too . . . There may not be much difference in viewpoint after all, since what dianetics calls for is the cerebro-human attitude which is native to all adults of our species.

Anyway, thanks for such good work. You persuaded Hubbard to answer criticism—a rare performance. You let a hostile person show himself up in full folly and then gave him more rope to snarl in. Cruel kindness—his notion of axioms, and interpretation of definitions, is pathetically ignorant, one feels unhappy for him—but I believe you did right, since foolishness can do so much harm unless it can be seen to be avoided. Best of all is Theodore Sturgeon's beautiful piece of work.

Excitement, whether pro or con, is as impossible in dianetics as in any other study which is mathematical in nature. That does not mean that one has no feelings. There is the joy in thought and discovery which Einstein and Keats, for instance, have spoken of so movingly. Also there is John Dunne's no-man-is-an-island motive; one feels that anybody's loss diminishes me, and that anybody's gain increases me. There is especially the Eliza motive, with the dogs of war in full cry. But Eliza needs to keep her balance, choose wisely among the icecakes, and keep a firm grip on the baby. One has to be steady.

I am not trying to be impersonal about this. I have one, and only one, child myself. He is fourteen, soon old enough to get greetings from the President. He is a quite masculine boy, loves guns. I am a fully feminine old mother who loves him, guns and all.

Nobody is kidding me into this either. We are all like the chorus girl who has been kidded by experts. Teachers can work over little ones for hours at a stretch, parsons can tell us who to hate, advertisers try to play on us as if we were typewriters, statesmen require us to be insane too. We are so used to being lost this way that we say we not lost, we here, wigwam lost. If anybody can make a map, the thing to do is to go and see how it works.

The mind is part of where we live anyway, isn't it? This fear may have perfectly good mechanical reasons, but fear itself is not rational. You have to keep your head and besides that you have to have, excuse me, guts.

Which is one of the reasons why dianetics, in these early days, is separating the men from the boys.

But as for being actually controversial, dianetics is not any more controversial than my cookbooks.

Alma Hill
Babson Park, Mass.

Marvel Science Stories.

A good number. I got it after the 15th so am ineligible to offer the title, borrowing a railroader's term: QUICK FREEZE OF A HOT BOX, which, seeing the poor woman is naked in space, applies.

I'm not too late to comment on the Dianetic dispute. I thought L. Ron, as usual, eminently charming, Theodore Sturgeon sane and Lester del Rey unaberrantly to the point—especially in declaring that hypnotism plays its part.

I have long been aware that suggestion, possibly a milder form of one mind's influence upon another than hypnotism (but still in class with it) is at the bottom of all learning. Education—the entire system of schooling that includes apprenticeship to the various trades and novitiate in the professions and arts—is a continuing manner of suggestion even though sometimes it is conducted by the hypnotism of the downright and dogmatic statements of dominant type teachers. "It's so because I say it's so" will satisfy the timid and fix statement in their memories.

The accompaniment of motion by magnetic fields seems to be a basic law, in life as in physics, though in life, motion may be termed action. A result is that in training of any sort, the follower is guided in a given path and there will accrue to him what may be found along that path. Once started in a path, a parallel of momentum will keep the student upon it and this is a hypnotic progression.

After reading L. Ron's charge that del Rey was motivated by aberrative force, I expected to find del Rey making a pitiable object of himself. I had to read him to find that he was both calm and rational and asking nothing of Dianetics, as a science, that one interested in science hadn't a plain right to ask. I felt the same lack and made the same criticism in what Sturgeon parenthesises as the "(acutely badly written)" book. L. Ron seemed in it to have no perception of the modus of scientific research. He repeatedly stated as facts conditions—for which he volunteered no manner of proof and I found it difficult to get anything cogent out of it. I felt that Dr. Winter, who wrote a clear introduction, could have made a far better job of it and have kept its 400 pages down to 100, with adequate and more impressive coverage of the therapy recommended.

Though I am very aberrative (having no sensational recall whatever, no memory of sight, sound, taste or other touch but a large and accurate memory for words) I was not drawn to ask aid of a therapist, even had I had the phenomenally high fee that satisfies

the sense of worth of a psychiatrist. I marked it off as a game for the rich to play with, which considerably weakened L. Ron's hope that he might improve the world through his "science's" 100 per cent availability. It would take me 15 hours of hard labor to acquire the \$15 for one hour's dianetic therapy. The discrepancy looks acute. Not all of us are equipped to soak the rich for means of treatment.

I saw Harvard's Bianca, on the stage, fall down when put to the test of perfect recall. She looked a bright creature but the gaze of thousands upon her evidently outglared the comforting glances of her sponsor, L. Ron. I've seen no other clear, though I have it from 4e Yackerman's pretty wife that she has succeeded progressively in cases yielding her an income of \$1,000 a month, half of L. Ron's salary from his foundation. These are figures that don't even make my purse itch. I have no means of achieving them and would be sorely put to it to find means of spending what Truman left me, should I attain to such income.

So, for me, until it is done with magic wands, it is better I continue aberrated, so long as I can refrain from violence, though I dislike apathy as much.

Battell Loomis,
Manhattan Beach, Calif.

Dear Ed.

... I guess you're getting 1,796,582.001 letters on the dianetics controversy (the figures to the right of the decimal point represent Hubbard's contribution). I don't think very much can be said after Lester del Rey's masterly rebuttal of everything Hubbard stands for. Not if you're at all interested in science, that is. As del Rey asks: "Where are the case histories? ... Where are the controls? ... Where is the scientific rigor? ... Where is the proof that 'cured' cases don't relapse? ..."

Until these questions are answered with verifiable facts and figures, Old Mother Hubbard can't be said to be giving mental unfortunates even a bare bone.

Yes, I've read the book. Cover to cover. I started it with the highest hopes I've ever had. When I finished it, I sat and lit candles for my dear departed four bucks. A crib on

every even numbered page; a quack on every odd numbered one.

To all those fanatics who've received the Gospels according to St. Ron, I say: Read Freud, (the man Hubbard's taken most of his stuff from, merely renaming it). Freud, the greatest psycho-medical mind of the age, states his ideas—which he formed in years of patient clinical work and observation—almost humbly in a "maybe-this-is-the-answer-I'm-not-so-sure" fashion. Never, "here's the truth, kiddies, the absolute truth—and the greatest thing since we swung out of the trees."

To those jerks who try to thrill me with stories of miracle cures for smoker's cough through dianetics, I say that if I'd accepted such hysterical reactions as scientific evidence, I'd have become a practicing member of at least fourteen religions and seventy-three cults.

To Theodore Sturgeon I say simply that I always thought a real man's anatomy made fence sitting impossible. . . .

That's all for now. Lots of luck with Marvel, and please, please, keep it as good as it's become.

Richard Lee Wolfson
New York, N. Y.

Dear Ed:

Thanks very much for the articles anent dianetics in the May ish of *Marvel Science*. They were interesting, albeit they *proved* nothing. Words simply are not things, and no amount of manipulation of them will *prove* a thing. Of the three, Sturgeon's bit was by far the best, as a guide to things and the approach to them.

Let's look at each article.

Unless one is going to write to Hubbard, get the names of the people mentioned, and look them up, he has said nothing to prove dianetics. I do not know how the laws on charitable corporations apply, but that has no bearing on the validity of dianetics. Hubbard says words which, for the most part, are vague guides to things which one may prove for himself with his own senses. For one who is willing to grant that they may be this guide, they are worthwhile.

Ackerman has things a little more to the point to say. He names a clear, he gives some

of the characteristics of a clear, and he tells you what to do in order to test dianetics yourself. If you want perceptible proof, try dianetics or look up the clear he mentions.

Sturgeon needs nothing but emphasis. His remarks are a guide to both the reading of the other two articles and to discovering dianetics for yourself. Bravo, buddy!

Del Rey, unfortunately, does not say anything that in any way validates or invalidates dianetics. He is arguing, without anything more tangible than words, that Hubbard's basic premises are wrong. In science, one sets up an experiment to prove the wrongness of a hypothesis; has del Rey done so?

True, there has been a paucity of factual evidence on the subject, but that does not disprove anything. It is a rather lazy thing to sit around and gripe about "no evidence" when it is possible to get it for oneself in less than 10 hours of work. As for hypnosis, the charge is unfounded and untrue. The auditor works like mad *not* to give commands, and the canceller is added protection *against* such a thing.

Mr. del Rey has stated 1) that he has seen no evidence, 2) that he has not investigated himself (i. e., trying it himself), and 3) that he doesn't believe in it. Disproof of dianetics? Hardly.

I have not yet stated my own opinion in definite terms. That opinion is, I am damn sure it works—by using the techniques Hubbard suggests, you get the results he predicts. I have audited people, I have been audited, and my personal experiences bear out the fact that dianetics is not a hoax or a racket. My expenditures have been \$4.00 for the book and \$30.00 to attend a series of lectures and demonstrations by Hubbard in Kansas City. I sincerely believe that I have never spent money for such valuable purposes.

I am not a professional auditor. But I have had experience in auditing, I have seen Hubbard work, and I have known several people who have been to the various departments. I venture to say that I can prove the validity of dianetics to anyone in 10 hours of therapy. If I can't, I shall be forced to change my opinions. But I've not yet seen a person who hasn't been convinced by three or less sessions of dianetic processing.

That's my stand and I'll stick by it until proved definitely wrong. I have not yet seen anything that offers even vague proof of its wrongness.

Again, Editor, thanks very much for the articles. I can only say again, as Sturgeon says, don't say a thing until you—personally—have given dianetics a fair trial.

Norm Storer
Lawrence, Kansas

Editor, MARVEL SCIENCE STORIES

As a convinced dianeticist, as the wife of a man who is currently preparing to become an H. D. A., and as the secretary of the China Lake Dianetics Society, which my husband and I organized last August, I am in a position to speak informedly on Dianetics, and even to add fresh information to that given in your magazine.

And I may state that I agree with all three of the parties to the controversy!

We know what Hubbard is talking about. We have been audited by several different people, and have audited in turn several different people, not all the same ones. We have seen Dianetics work. We know how it works and why it doesn't always work the first time. We know what to do when it doesn't work.

We are not unqualified to judge Dianetics scientifically. I hold a B. S. in Zoology, with emphasis on human anatomy and function. My husband holds B. S. degrees in Mathematics and Physics, and is currently employed in doing research for the Navy as a Physicist, GS-9. We are well known for our resistance to fads and cults, and psychometry has shown us to be above normal in intelligence and emotional stability. This is not by way of boasting, but to establish that we are not crackpots.

We are neither clears nor releases. I have had about 20 hours of auditing, my husband has had over fifty. We both have shut-off sonic, and the usual assortment of circuits and similar obstacles to auditing. It will probably be some time before we are clear...

In regard to Sonya Bianca—I regret to say that the lady was not a clear at the time of the lecture. Hubbard had not had a chance to check her himself, since she had just barely arrived from the East, but had to take the word of others. Later a check disclosed undischarged grief, which when run, in turn disclosed other, unsuspected engrams. She took the professional auditor's course in L. A. afterwards, in company with a friend

of ours, who reported that she was a high release at that time, and that after finishing the course she married her auditor, whose name I did not inquire, not being interested. I don't know what she is doing now.

The only known clear on the West Coast is Mrs. Hubbard. She is available to anyone who wants to get an appointment with her. If anyone expects to *see* any startling difference between her and other persons, he will be disappointed. The difference between a clear and an aberee is in function, not structure, and can be observed in behavior, not appearance. Association over a long period of time with her, as my husband has recently had, will show differences, and so will psychological tests. Ten minutes' conversation will not.

I agree so completely with Sturgeon that I can't think of any comment to make on his article.

In regard to Mr. del Rey—while I find things to agree with, I certainly don't agree with all he says. In some cases he is handicapped by lack of information, and in some cases his aberrations drive him to somewhat irrational conclusions. I don't blame him—the poor fellow can't help it. I know someone just like him.

I agree with Lester in thinking that clears should make themselves available to the public. If I ever become a clear, I intend to do so, even though I expect a lot of annoying attention. As a clear I won't annoy easily, and I figure the welfare of Dianetics is worth any discomfort I run into.

In regard to axioms—Lester should throw away that pocket-size dictionary and get a good one. There are other meanings to the word "axiom" than "self-evident truths—a proposition or statement generally accepted as true." My Webster's Collegiate—not a complete dictionary, by any means—says, "3. An established principle which is universally received; as, the *axioms* of science." The axioms of Dianetics are sufficiently established to satisfy everyone who has actually investigated the evidence carefully and impartially—as for the universal reception, there are still people who think the world is flat.

There's no point in going into the rest of his letter. Aberrations are usually simple exaggerations of rational behavior. It is quite rational to be skeptical, as is Mr. Sturgeon;

but to be skeptical to the point of rejecting all kinds of evidence as insufficient and at the same time refuse to do any investigation for himself—that is obvious aberration, and stems from engrams. And there is no way to reach an engram by reason—the only cure is auditing. My friend, whom Mr. del Rey reminds me of, shows the same pattern—and even occasionally doubts the evidence for his own existence. Are you quite sure you exist, Lester?

Mrs. George F. Forbes
China Lake, Calif.

Dear Editor:

The best controversial cross-section regarding Dianetics I have yet seen to date was in the May issue of MSS. I think that there is nothing more admirable than to settle disputes and theories on such an arbitrary round-table format . . . yet, no matter how cooperative the medium of expression might be, each dissertator is prone to see things his way mostly, inasmuch as he may feign a lack of bias. Hence the following views expressed herewith are not so much pro or con dianetics but moreover pros and cons relative to the opinions of Messrs. Hubbard, Sturgeon, and del Rey.

Let's face facts. Mr. Hubbard is "pro" his brainchild for what other reason other than the fact that he invested months, maybe years, in gathering data and putting his theorems into alleged practice.

So far one might say that there have been more things said in favor of dianetics than otherwise. For instance, what I have gathered in articles, etc., from those who have meticulously or superficially studied dianetics are such sentences and phrases as "There's *something* to it all right." "It's a wonderful *thing*." "It's undoubtedly a wonderful discovery . . . there's *something* to it all right." However, in the majority of statements I have come across I have found more vagaries than any analytical mind could put up with.

Mr. Hubbard cites the case of a girl who would not have been "normal" and that "No observer could deny that this girl is now a better human being because of dianetics." By the way, I would like to cite as an example that in the several lectures Mr. Campbell and Mr. Hubbard have given in local

N.Y.C. and metropolitan districts around here, they still carry this very *same girl* as an example, and the number of psychotics who were allegedly cured in, I think, Washington, D.C. asylums are still 270. This was a figure given by Mr. Campbell last Feb. 1950, over one year ago, and this is still the figure they are using in their lectures, nor have any explanations been given as to what form of *modus operandi* was used in curing these psychotics. Why?

Mr. Hubbard goes on to state, "Will Mr. del Rey . . . pronounce judgment on a body of knowledge he has not understood, and a technique he has not used . . ." — In my personal opinion, I doubt if there are others better qualified to speak or use dianetics than Lester del Rey, taking into consideration the *fact* that del Rey would have completely hypnotized an audience of some two-hundred people at a convention last July, 1950, at the Henry Hudson Hotel in New York. I'd like to add that Mr. del Rey stopped in time. I and several hundred others, if not more, feel that Mr. del Rey is more qualified to speak and use dianetics than some of the top men of the Foundation are.

I fear that though Mr. Sturgeon alleges to have taken the middle-of-the-road policy, he *DOES* suggest more to try dianetics than not to try it. His opinions were too one-sided, and more *pro* than *con*. This was obvious throughout the entirety of his script. I am afraid that Mr. Sturgeon is not a genuine agnostic in this matter.

Lester del Rey says, "(Hubbard) . . . does give us some rather interesting and sexualistic little stories as case histories, but they have about as much relation to case histories as the Doc Methuselah stories

have." However, Mr. del Rey neglects to exemplify the difference between *fact* and *fiction*. How really strong IS the dividing line between fact (reality) and fiction (unreality)? Have not the facts of several decades ago proven to be fictitious, and the fictions of the past today proven factual? All that one has to do is delve into several volumes of the once scorned STFantasy "pulp fiction" 'zines of the late '20s and early '30s, as well as study the medical conclusions and analyses of the past to prove this.

Dianetics has done one thing: It has opened, for the first time, the shut and semi-shut minds of countless thousands of people, and if dianetics, Hubbard, and his retinue are not able to fulfill nor accomplish anything further than that that's already been done, they have accomplished more than all the sciences and religions have been able to do in ages to intellectually emancipate the masses into being able to *think* better for themselves.

As far as I am concerned, dianetics can continue to promulgate itself through any medium it chooses. For instance, at Bergen College, in Teaneck, N. J., we have formed a discussions club, in conjunction with several professors of ours and their approval to disseminate all subjects correlated with dianetics. But foremost of all, we are NOT a dianetics club for the purpose of raising any standards nor in converting unbelievers into believers. We wish to test anything that may have been proven factual for fallacies, and check anything fallacious for facts. I suggest that anyone interested in dianetics to follow this example.

Calvin Thos. Beck, Founder
ASF SOCIETY
North Bergen, N. J.

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Here are the changes you asked for. We hope you like them:

1. A four color cover by a top-notch cover artist; clearer cover layout with less printing.
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(If there's something you want in MARVEL (or out) let us know—THE EDITORS)

WHERE WILL THE FIRST SPACESHIP GO?

(A special Feature by the Editors of MARVEL)

Since science-fiction is essentially prediction, MARVEL asked three of the field's leading writers to present their ideas on the best spot for a first landing. Mars, the Moon or Venus!"

MARS: NEW WORLD WAITING

by JUDITH MERRIL



"... as long as
dreams are free ..."

THEY TELL ME you can build a bigger and better bomb-launching site on the moon.

They say, hopefully, that the conquest of a new planet might provide vast new sources of mineral ores to eke out Earth's dwindling reserves. The moon alone might open up enough real wealth to keep all our present-day heavy industry captains in business, and create half a hundred brand new billionaires besides. The natural resources hidden under Venus' blanketing atmosphere, the surface salts and minerals of Mars; the new elements that wait, perhaps, on the outer planets—all these speculative profits are opening the eyes of forward-looking financiers, and intelligent governmental

administrators to the possibilities of space travel.

They tell me, too, that's the kind of motive power it takes; that we'll never develop the seven-plus gravities we need to get off the Earth, without the backing of big business and the military. I hear around town that the "starry-eyed idealists"—that's you, boy, if you've been reading science-fiction, and gazing at the skies with a dream in your eyes—that the "starry-eyed fools," as they sometimes call us, aren't going to float free of Earth's pull until space travel is economically feasible and militarily advantageous.

I can't argue that. You know and I know that Columbus first came to a new world on this side of the Atlantic Ocean only because a mighty military power of his day wanted to find a new trade route to India. As long as dreams are free each night, and cheap at the price of marihuana, nobody's going to shell out good money to finance an exploratory expedition just because you or I or the other guy wants to find out what a meteor shower is like in space.

So the busy boys in the Pentagon, and the bully boys on Wall Street have my blessings, in spades: let them develop new fuels and try out new alloys; let them

build atom-powered aircraft, and spatter the sands of Arizona with the refuse of experimental rockets. I'm more than happy to see them putting up the dough, even if I find their reasons anywhere from ridiculous to repugnant.

They can pay the way, and take the profit. That doesn't mean I have to beat my brains out thinking about which particular hunk of rock in space contains the most valuable mineral ore; and I am certainly not going to give a moment's thought to deciding what location on the moon's face best commands the Eastern hemisphere on Earth. The men who make that first trip will be duty-bound to consider these factors, but that won't be why they're going. Our old analogous pal, C. Columbus, talked Isabella into gambling on a trip—but he had his own reasons for wanting to go, and he didn't much care who made the money.

Personally, I never commanded an air flight, and I have yet to clip my first coupon from anything more exciting than a cereal box-top. Bonds and bombs are both out of my line; but that doesn't keep me from getting an itchy feeling where the wings could maybe sprout if I tried a little harder, every time I think about the worlds away beyond.

And, like Christopher C., I've got my own reasons.

Don't get me wrong. When I throw in my vote for Mars as the first stop, I'm not saying I wouldn't go along if somebody offered me a free passage to the moon. Try me the next time you're heading in to Venus, and I'll cheerfully bum a ride, even if I do spend the trip chewing the fingertips of my space suit, and worrying about the acids below the acids below the acids in that mysterious atmosphere. But if you want to get this girl really hopping, give me a chance at a trip to Mars.

Why Mars? There's a reason son. There are two of them: first, because we are almost certain that there is native life of some kind on the planet—maybe only vegetation, but *life*; second, because there is some evidence to indicate that *human beings can exist on Mars*.

No, I *don't* believe we can step out of our space-ship, take a deep breath of the fresh clean air, kiss the red-dust ground, and plant a flag claiming the territory west to Syrtis Major in the name of the Stefnis Interplanetary Society.

No, I *don't* think we can then throw up a lean-to, store our supplies, and hop into our helicopters to flit about the planet, gathering Mars-berries as we, or plucking luscious fruits from the withered vegetation of the canal zones.

I *do* think there's a chance we might be able to adapt to the land, or adapt it to us. The gravity is little more than one-third Earth normal, but that's not an impossible thing to adjust to. The atmospheric pressure is too low for us; the water vapor in that atmosphere is insufficient; the free oxygen is ludicrously inadequate. Nevertheless, there *is* an atmosphere; there is some water vapor, enough to support what appears more and more indubitably to be vegetable life: there *is* some free oxygen in a natural state; and there is, as implied above, almost certainly some sort of life.

Conditions of life on the planet would be incredibly difficult:—probably worse than those faced by Byrd's Antarctic expedition; probably far worse than those faced by the first settlers in the old new world. But the human animal is preemi-

nently adaptable . . . and fantastically ingenious. It is my firm belief that, given the minute measure of the necessities of life as we know them to exist on Mars, human ingenuity and adaptability could solve the problem of human life on that planet.

At the beginning, certainly, we would be completely dependent on Earth. We'd need oxygen helmets, and an oxygen supply. We'd have to take along supplies of food for an indefinite period of time. There would probably be pressurized living quarters for comfort and pressure suits part of the time. We would most certainly require an infinitude of items brought from Earth to make life bearable at first.

It is possible, however, to conceive of establishing a self-sufficient economy. We could, from our present knowledge of the planet, build machines there. We could, very possibly, extract water and oxygen from the planet itself; design rockets and/or airplanes, and produce suitable fuel for them, in which to travel about the planet; introduce Earth crops suitable to an extremely dry and rarified climate—and/or mutate Mars vegetation to become edible to humans. We could even think in terms of a planet-wide balancing of the atmosphere, some day, some way, by careful regulation and cultivation of crops.

Of course, these things may be equally true of Venus, of Pluto, of the Earthward side of Mercury, or of the satellites of Jupiter. They *may* be, but we *know* about Mars. Of all the heavenly bodies, we know most about the moon, and next to that, about Mars. We know, of the moon, that it does not have any atmosphere; that it does not show any evidence of life; that there is no sign of the presence of water vapor or water. It would be impossible *ever* to walk the face of the moon without pressurized suits, because there is no reason to believe that even the highly adaptable human animal can adjust to a total absence of outside pressure.

We have this data, I must in fairness add, only about one side of the moon. About the other side we know nothing, except by extrapolation. We are in the same position in regard to the other planets—that is to say that while we know their masses and sizes, their periods of rotation and revolution, and their distances from the sun and their albedo, we do not have any information of the living conditions on their surfaces. And we know less, probably, of the surface of Venus than of any other "nearby" planet.

For this very reason, I want to go to the far side of the moon, I want to go to Venus and to Uranus—for that matter to Sirius and Betelgeuse. If I can't go myself, I want to see others go, and hear their reports when they return. I am curious, or I would not be a reader and writer of science-fiction.

But even more than I am curious about space, I am fascinated by life: human life first, and other forms afterwards. I am interested in life reactions or I would not be a reader and writer of fiction.

On Mars I see our first and best chance for the discovery of new forms of life, and for experiments in new ways of life for humans. This is my reason for wanting to go there first.

There are other factors that might be considered by persons more technically minded than myself. There may be dozens of engineering considerations for—

or against—Mars as first choice. But like C. Columbus, who wanted to prove to himself that the world *was* round, I have my own reasons for wanting to take, or witness, a trip to Mars.

I feel there's life in that old planet yet—and I want to know more about it before I die.

J.M.

FIRST GOAL: LUNA

by WILLY LEY



"... training flights
come first!"

NOW IN 1951, the spaceship appears to be in the near future, and I have gone on record repeatedly saying that the moon will be the first goal in fact as it used to be in fiction. Traditionally as well as historically the first goal of fictional trips into space has always been the moon. The reason why it was the first goal historically was simple: to naked-eye astronomy there was no other heavenly body—except the sun which was evidently much too hot—that was decidedly a *body*.

Philosophers might fight over the problem of whether Venus and Jupiter, to name two examples, were solid bodies too. They might debate whether the Arabs were right with their crazy notion that even the smallest fixed stars were larger than the earth. But about the moon there could be no argument.

The same reasoning still held true later when the telescope had settled the problem of whether Venus was a body or a flame in the sky. The existence of the telescope was something which might change philosophy, but except to the few who owned one it did not influence emotions.

Of course the first trip of the first spaceship is going to be, literally, to nowhere. It will be just an ascent into space for a few thousand miles with subsequent return to earth. But the first landing elsewhere will be on the moon.

I advocate this not merely because it has become traditional. I also know that the neighboring planets are more exciting by far. I am as curious as anybody else to learn just what is hidden beneath the perpetual, dense and probably multiple overcast of Venus. I would not be able to sleep soundly most of the time while a ship was on its way to Mars, waiting for the first reports about the types of planets which color certain areas greenish and for a statement about the markings which comprise what we call canals. Still, I think that the trips to the neighboring planets should be preceded by a landing on the moon.

I have reasons, too. Most of them are tied up in one way or another with the comparative nearness of our satellite, although that fact is not as decisive as one might think as far as fuel expenditure is concerned. In space it is not the distance

between two points which costs fuel, but the gravitational fields to be overcome. Now the trip to the moon consists of overcoming two gravitational fields: first you have to lift out of that of earth and then you have to fight that of the moon so that the ship comes to a standstill just when it reaches the surface. These two maneuvers, plus the reserve which one would carry as a matter of course, would also take the ship to Mars or to Venus.

As far as fuel expenditure alone is concerned, for a one-way trip, there is not much difference between the three possible goals Moon, Mars and Venus. But the spacemen no doubt will want to come back. Then all the advantages are with the moon. To lift out of the field of Venus is almost as difficult as lifting out of that of earth. Mars is smaller than either Earth or Venus and it has a weaker gravitational field. But its field is still much more powerful than that of the moon. (Let's neglect the fact that the gravitational field of the sun enters into the equations too, because for a roundtrip it mostly cancels out.)

But then we have the little problem of "auxiliary fuels" for pilot and crew. They will want to eat and drink every day and breathe every minute. Let's suppose now that the three trips are made with minimum expenditure of rocket fuels, just enough to make the trip at all. For astronomical reasons there have to be waiting periods both on Mars and on Venus. But the time spent on the moon is largely up to the pilot, we'll say that he decides on seven days. Then you get the following time table:

Destination:	Trip to:	Waiting Period:		Trip back:	Total
Moon	4	+	7	+	4 = 15 days
Mars	258	+	455	+	258 = 971 days
Venus	146	+	470	+	146 = 762 days

The requirements per man per day will be about 20 lbs. Now just go ahead and do some multiplication.

In all these things the nearness of the moon counts mostly via the time consumed. But for the following considerations it counts directly. The problem of navigation for a spaceship has been solved in principle. We know how it can be done. But for a trip to the moon no navigating is needed in the usual sense, for radar will give the direct distances. Since the path of a moonship would not be a perfectly straight line but rather a gentle S-curve, the radar reading, being line of sight, would not be precisely in the direction of motion all the way. But they would be virtually in the direction of motion, hence usable without correction, at both ends of the path where it counts.

Furthermore the ship could keep in touch with a ground station all the time which would not be possible (at least not with present day equipment and techniques) on interplanetary trips. And if something did go wrong while the ship is on the moon, a second ship, held in reserve for just such an emergency, would be able to come to the rescue within four days. With that thought in mind look back at the little table once more.

In short, a moontrip would still be virtually on "home territory". Interplane-

tary trips decidedly are not. Of course you are at liberty to consider a moontrip as a "training flight". But training flights always come first. W.L.

7 OUT OF 10 ASTROGATORS CHOOSE VENUS!

by WILLIAM TENN



"... anything might
be found!"

IT'S GOT TO be Venus!

Not just because the moon would be a waste of time!

We've had a long, hard, nickel-begging, penny-pinching job, but we've finally built ourselves a rocket ship. Hard-eyed men with barbed wire in their beards have come out to the experimental base, toting squirrel-rifles, and taken pot shots at the personnel, because: "Ef'n God had intended man to go out to them planets, he wouldn't have created the dern things so doggone fur apart!"

They wouldn't give us the new beryllium alloy for the tubes (there isn't much available as yet, and what there is has to be used where it will really make money: as zippers on the very finest of fashionable girdles); and latest artificial element 109 can't go into the fuel tanks because a dreamy idealist in a physics lab thinks that maybe we could make a bomb out of the stuff that would blow the whole blooming, star-cluttered galaxy. Well, we manage. We slap a band-aid on the hull there, stick a couple of thumb-tacks here, boil up a few ingenious substitutes—and take off for the wild black yonder.

Here it is. Space travel at last. "Looka me, Orville, I'm flying!"

We come down on the other side of the vacuum. Willy Ley clubs the captain into unconsciousness, butts the astrogator in the stomach and—neatly tripping the excited young engineer—he steps out onto the surface of the moon with the very first pair of human feet.

Steps out on what? A planet? Another world maybe, with all its tremendous possibilities? Na-a-ah! A satellite, that's all. *Earth's* satellite. A tiny blob of used-up matter that runs around us. Not even alien soil, mind you, since the most generally accepted theories of lunar origin agree that it was born when its parent planet had cooled sufficiently to form a definite crust.

I give you then our first extra-terrestrial explorer—if we are silly enough to aim at the moon. He wanders this airless, lifeless, lump whose gravity is so different from Earth's that serious physical discomforts, if not injury may result from long exposure to it. He must wear a special suit that will provide him with the pressure as well as the constituents of his home atmosphere. He sees no change except for an occasional meteorite slamming in from outer space and roiling up greyly the rock dust which is the omnipresent blanket of Luna. Weather? At its

hottest, the moon's temperature is well over that of boiling water. At its coldest, it drops a mere six hundred degrees!

So back to cynical old Earth come our adventurers. They have a wealth of fascinating facts about astronomy and geology, and they've been able to name a few new craters. All this is of real and abiding interest to—oh, let's say, one-tenth of one percent of the Earth's population.

What have they brought back? Rock: specimens of rock and pictures of rock. Rock such as we can find in bare and desolate places on our own world, rock in all probability identical with the material of our planet's surface, bare, uninteresting, hard and unyielding—Rock!

Whereupon, the tired but happy explorers—having been wine-d, dined and ticker-taped down Broadway—will be asked: "Look, this is very interesting indeed and no doubt has been heaps of fun for all concerned, but would you mind dropping this dead-loss long enough to help with a few really important things? Like, for example, a twenty-seven-inch television screen, or a slightly faster, guided missile?"

It's got to be Venus.

Not just because the asteroids and outer planets are impossible!

The asteroids have all the disadvantages of the moon. The outer planets are either still in a liquid state, or ice-locked chunks of night at enormous distances from the sun. Of course, you can always try an interesting item like Saturn's moon Titan. There's an atmosphere on Titan all right, and there may be adequate oxygen in it. Only difficulty there, you'll have to chew it thoroughly before breathing. It's frozen solid!

No, it's got to be Venus.

Not just because Mars would be a waste of time!

Suppose our rocket ship scrapes down across the good red sand of Mars. Judy Merrill goes for her first bouncing stroll in the deserts that practically cover the little planet. Little? Almost half the diameter of Earth. Gravity, while a little better than the moon, is still only two-fifths of the pull we and our parents and our parents' parents have been accustomed to. A child born on Mars will have an awfully hard time on Terra.

Does Judy wear an oxygen helmet as she looks at the distant sandstorms? Well, not unless she wants to breathe. If she finds a particularly deep hollow where some rare oxygen has collected, lies flat on her belly and uses fantastically fine machinery which has not yet been invented, she might be able—after a while—to collect almost enough to take a good-sized gasp.

And water? Yes, there might be water on Mars. Enough to form a polar cap that's all of several inches thick. While it looks pretty wet when stacked up against lunar pumice, it's nothing to base and indigenous civilization upon.

Speaking of which, Judy is not very likely to run into any herds of *pentagriffs* browsing upon the topmost branches of the blue *forssinga* trees. In all likelihood if any life has managed to develop and survive in the narrow bleakness of the Martian landscape, it is plant life, and of the most primitive kind.

The temperature? If you stand on the equator at high noon you can keep warm. Most other times and most other places—you freeze. You really hate to see that dime-sized sun go down.

So back you come from Mars—and this has been a fantastically expensive Voyage One—with a different set of textbook fillers and photographs. You have jars of yellow, pink and red sand. You have a couple of botanical specimens; entrancing items like the stuff we find on the damp side of large stones. If you're *very* lucky, you've found a Martian ant or sand-tick. If you are anything of a humanitarian, you will have left no colony on this chilly dying world.

I doubt very much you'll get to go again. The worst thing you can do to the human race, as an explorer, is to bore it. Quite some time before Columbus, Leif the Eucky, and Eric the Red made some discoveries in the western sea. While colonies were established, interest waned rapidly. You must give your culture something new. As Columbus did the rich warm West Indies—for example.

I tell you it's got to be Venus!

Not just because it's the planet most like Earth!

Venus has been called Earth's sister. It's closer to us than any other planet: its surface gravity and diameter are much like ours. You might feel a little light on your feet, but you won't feel uncomfortable.

Not just because it's the planet we know least about!

Latest opinion is, that under those heavy clouds it rotates, although its days may be quite long. We don't know whether its surface is all sea or all land or an interesting and tasteful combination of both. Since it is nearer the sun than Earth, it must have an average temperature about like our *hot* hot-weather. We don't know just what composes its atmosphere which is one of the few we are certain exist. Jeans insists the spectroscope's findings of formaldehyde in the upper layers is proof that no life—as we know it—can possibly occur on Venus. Consider the following:

(a) We don't know what the top of *our* atmosphere looks like from the outside, (b) our observations are necessarily filtered through the air ocean under which we live, (c) a planet so like Earth in most important respects is very likely to possess an atmosphere quite similar to it and (d) life different from "life as we know it" would still be life, on however alien a chemistry it might be based, whatever weird and exotic forms it might take. It might be truly wonderful. . .

If Venus has oxygen, we could probably walk about on it with our shirts unbuttoned. If it doesn't, we'll need a space-suit with all the trimmings just as on Mars and the moon, *but*, we will then encounter a world bustling with all the strangeness of carnival.

Not just because it's the planet on which anything might be found!

Venus might be dank with the tread of Triassic dinosaurs; or it could be a place on which atomic energy has been but recently discovered. The animals discovering it could have divided into two separate groups, each of whom is frantically preparing for a war of nuclear fission while admitting openly that such a war *could* mean the end of Venus.

(please turn to page 117)



Under the Lens

Dear Ed:

You coulda bounced me offa the floor with a feather! When I saw MARVEL's new look, I mean... Wow! I enjoyed the first two issues, and planned to continue buying your mag, but *now*... it's a *must*.

Now that I've gone into childish ecstasies, allow me, sir, to compliment you on an excellent magazine, including cover, format, art, stories, and departments. And contest.

I haven't made use of the comment-coupons you so generously included inside MSS, as I couldn't bring myself to deface such a magnificent effort. I'll try to contain myself long enough to mull over the stories, however. Lessee... they were all good—I believe mebbe I liked Vance's "Golden Girl" most of all, mainly because of the ending. I'm a sucker for surprise endings.

Next came the "Ones", by a lady who is fast rising to impressive heights in stf. The identity of the "Ones", came as a complete surprise, as did the fact that Miss Curtis side-stepped the usual big-battle ending and settled things peacefully. Things have changed since Cap Future!

Third, I suppose, was Captain Mumbo-Jumbo's Flying Saucer. I'll always like Clark's stf stuff. "Second Advent" will have to come next, again because of the ending, although I foresaw it. I like newcomer Reynolds' shorts (stories, I mean. Nothing personal). I believe this was the first of Mack's little tales seen outside of CENSORED.

Tenn's "Hallock's Madness" takes fifth place. This was a new idea, as far as I know, and an entertaining piece, but the eat-a-date-to-transport business wasn't so hot. He could've left off the final line, too, for my money.

I hate to see Lesser's "Circle" in sixth place, but—things are tough all over, Milt.

The Thing (where have I heard that before?)—it's a shame this piece ends up in nexta last place... with a different ending it might've been further up the list. I like the treatment given the "food pills" of the future by Matheson. I always thought it'd be a bad idea, too. But, after all that suspenseful build-up, the end fizzled. Poof!

The Polyoid—mebbe I just didn't get it. Did anybody else?

After all the build-up you gave the Dianetics "controversy"—which it wasn't—it was poor. Best of the three letters was Ted Sturgeon's. I did enjoy learning what the three writers look like. Say, that'd be a good idea for a department. A thumbnail sketch of a different author each time, with a portrait included by Burgos.

I like the quiz... useful, besides entertaining... Under the Lens could be larger... never cared for scientific shorts much (Amazing Science Adventures). None of 'em were amazing, anyhow. I'd like to see the Test Tube lengthened, too, or are you the lazy type? (poo... you couldn't be—

not with the way you improved MARVEL!).

How about continuing the "Cover Title Contest" as a regular feature? You wouldn't have to use the originals for prizes... think up something else. After thinking a bit, I've decided on "TRANSFER" as my suggestion. I like Saunders... especially the second isb. But, re the third: I've a peculiar feeling that girl's complexion wouldn't be so peaches-and-cream as he depicts. I've heard what happens to people who go into space minus special suits. At least Saunders' colors aren't so terribly bright as another cover artist I can name... therefore the pictures don't give the lurid impression they would otherwise. That's why I liked the cover for issue No. 2... the girl wasn't a central figure. Not that I don't like pics of yumm-yum girls... they're fine... on the inside...

There's one big question: When in blazes does MSS bit a bi-monthly schedule? Planet took many years too, but I've a feeling MARVEL won't...

Well, this has run on for quite a while, and it's high time the Voice of the Bluegrass quieted down. But I'm writing to you, and to MARVEL, and not just to see my name in print.

Suggestion: Less printing on the kiver.

Suggestion: Blurbs less circus-barker-ish.

Suggestion: Book review dept.

Suggestion: Fan dept.

Suggestion: That I shut my trap. Motion seconded and voted unanimously in the affirmative. But—I shall return! (recognize that phrase?)

A. J. OFFUTT, JR.
Taylorsville; Kentucky

P.S.: For this I began page four?

J.S. JR.: I want correspondents via epistula... any age... I'm 16.

Okay, Offutt, you can get up off the floor now, and tell us how you like this issue. Glad you're so enthusiastic about Marvel, because we are too.
—ED.

Dear Ed:

Well, I have got to hand it to you. I guess that you have really showed fandom what you can do with MARVEL. I was utterly astounded, if you will pardon the expression, when I saw your cover and your change in format. I am really impressed with the radical change. I must-bastily add that I do fully think that with this change your magazine will climb to the peak that it should have soon. MARVEL before the war was a top notcher. It is that today also.

Give us some of those fine yarns by Williamsnn again. Some like IRON GOD, or TOMORROW, by Taine, or the greatest one—SURVIVAL.

Betsy Curtis has really got what it takes. The Ones was very good. In fact it was extra good. Are you going to revive Dynamic? Oh, if you do, boy, will it be a lulu, I can see it now, Smith, Williamson, Curtis, and Van Vogt (if he is not getting an engram out), all in one issue. Ouch! Boy, was that a hard pinch.

Keep we fans informed as to the developments. I'll be eyeing you.

May I get a few words in here for the San Diego Science Fiction and Fantasy Society? If there are any fans around San Diego that are not members yet, please contact me. We have in our club some fine Science Fiction authors, such as Cleve Cartmill and Stuart Palmer. Also there is a new fanzine ready, called: *Worlds of Tomorrow*. Sells for 35 cents. Send money to me.

ROGER NELSON
President—S.D.S.F. & F.S.
4070 Georgia
San Diego, Calif.

Dynamic is—as yet—only in the thought-and-possibility stage, but we'll certainly keep ye fans informed. We got Van Vogt for you. Hope you like the story. —ED.

Ed, ol' man:

Like Gerald Hibbs, I think informality makes for a better atmosphere in a letter column.

It's a MARVEL!

Really!

I'm referring to the sudden great improvement—and half-tone illos, too! Even one by Paul (I don't like his people, but MAN, those monsters!).

If you don't mind, I'll ignore the dianetic furore—except to mention that anyone with a wirecorder is eligible to get in on a dianetics round-robin that Wirez presently has rolling.

Considering the subject of your May cover (bulkily space-suited men, undressed woman in airless space), my only suggestion for a title or anything similar is: "Good GOD—not again!"

Any chance Lee Ames is kin to Lee Hoffman, ed. of QUANDRY? Oh...

Napoli, with the style he used on page 65, surprised me. Much better than his generally low average with just pen and ink. More like.

Jan Romanoff made mention of you getting Bradbury. Good if you can—but with authors like Richard Matheson and Jack Vance around, I wouldn't worry.

And to Malcolm Gibbs: hold it, Clyde! Scientifiction (preferable 'science-fiction') mags shouldn't print straight weird material for the same reason you don't go to Western mags for stories of the 25th century.

Mind if I offer a word of advice? If you want to have a long letter column (and I hope you do) keep the small type so you can have more letters in less space. If any fans disagree, tell 'em it's either less letters or smaller type. I don't think anyone'd go blind from just reading thru a few dozen letters.

SHELBY VICK
National Fantasy Fan Federation
Lynn Haven, Fla.

That's good, Shelby ol' man. Since you like Paul so much, we had him do another. This cover by Bok any better? —ED.

Dear Ed:

I like your new format. I find it more attractive than the old.

To me, it is a toss-up, which is the more interesting, the stories, the Dianetics discussion, or the picture contest...

Dianetics is a hot issue. I'm pro. I've been using it for some months, having spent two hundred hours on my wife. As she is my first case, and as she is full of psychosomatic ills, naturally it has taken me longer to get started and get results than would otherwise be the case. Some good results have been seen, but the basic trouble hasn't been located yet. The only thing that one can definitely put his finger on so far as my wife's right hand, which suddenly started to heal up and gain its former strength about a month after I ran the experience connected with its injury. The healing had been delayed about two years.

As far as the discussion in the magazine is concerned, I think Ted Sturgeon has the best argument of all. I think his viewpoint could well be used in all types of controversial issues.

In the matter of stories, I liked The Ones by Betsy Curtis the best, Jack Vance's Golden Girl is second with Capt. Wyxthphl's Flying Saucer third. I would have liked the Golden Girl better, if it wasn't such a tragedy. Man seems to be the cruelest creature in creation!

Features that I like are: the story titles carried on long on the bottom of the pages with the stories; all stories—but one—in one piece rather than continued on some back page; also all stories complete (I read so many serials that it is a wonder I can keep track of them at all!). The illustration for The Ones would be beautiful in color—the best one in the mag—and I like the idea of telling us who the artists are.

The artist of The Ones story illustration is almost as good as Virgil Finlay. So far he's tops in my estimation when it comes to drawing pictures with beautiful girls—he almost makes your dream girl come true!

All in all, a swell issue. Thanks a million. Holy Cow! I've got to wait 'til May first for another issue? This can't go on!

EMORY H. MANN
West Townsend, Mass.

Dear Sirs:

Hooray for MARVEL! In its new format, it is sensational...

I think Hubbard's Dianetics is admirable, but as Del Rey sez, howza bout those case histories?

To Malcolm Gibbs: Hugo Gernsback invented the term "Scientifiction" back in 1926. I pronounce it *ji-en-ti'-fik-shun*.

Reynold's tale was good. Clarke's was corny but cute. "The Thing" was screwy. "The Ones" wasn't as good as "Hallock's Madness". Love that Paul pic! I didn't care for the Walton opus.

I like the quiz. Why not throw out "Amazing

Science Adventures" and put in an STF comic strip or something?

Howza bout trying to get "World-wrecker" Hamilton to do a feature novel like "The 3 Plane-teers" or "Captain Future"?

Also wanted: back cover painting.

I can honestly say that in all my years as a fan, I have never seen such a marvelous change for the good wrought in any mag!

ELDON "KITTY" EVERETT
P.O. Box 513
Tacoma, Wash.

Dear Sir:

First, the story ratings: 1—The Ones, 2—Golden Girl, 3—Hallock's Madness, 4—Polyoid, 5—Second Advent, 6—Captain —'s Flying Saucer, 7—The Thing, 8—Circle. The Dianetics controversy, if rated as a story, would come 2nd.

Second, the cover title: After noting carefully the filmily clad girl with no helmet being carried in airless space by men in heated space suits, complete with helmets, my title is FOOLISHNESS.

Third, I'll give you my honest opinion of your magazine: After your first issue I consigned it to a class with Amazing, Fantastic and Planet (very bad). Your second issue looked just as poor, so I didn't buy it. Now I'm not going to say your third issue was marvelous, and places you in a class with Galaxy and Astounding because it wasn't and doesn't and what's more you know it. But I will admit that your third was a big improvement over your first two, both in story content and format especially the latter.

Your interior illustrations are well above average for the field but your cover was not, such a cover would lower you to the level of the common herd no matter what the quality of the stories, at least many people's opinion. . . .

ED. BUTENHOF
Daly City, California

Thanks for an honest opinion, Ed. But we give you due warning that we're headed for the top. If you stay with us, and keep us toying the mark, it'll be that much sooner and that much better.
—ED.

DUE TO THE LARGE NUMBER OF LETTERS IN ANSWER TO THE DIANETICS CONTROVERSY, WE DEVOTED MORE SPACE TO THAT SUBJECT. IN MARVEL'S NEXT ISSUE THIS COLUMN WILL BE CONSIDERABLY LONGER.

7 OUT OF 10 ASTROGATORS CHOOSE VENUS by William Tenn (Continued from page 114)

It might be the home of entirely philosophic and immobile entities based on silicon instead of carbon, or a planet of lovely tropical islets, gently stroked by the warm and surrounding sea. Can't you see the posters: "This year come to Venus—the vacation planet?" And imagine finding several intelligent but entirely different races on the same world!

We might return with holds crammed full of vines bearing a delicate, ermine-like fur, or tiny, friendly little, animals which have the ability to season foods exotically by means of telekinetic control! We know so little of Venus beyond the probability that it is a thoroughly new world, teeming with the unusual. But anyway—

It's just got to be Venus!

Not so much for any of the above reasons, but because I definitely intend to stow away on that first rocket ship. And there's nothing—absolutely nothing!—I enjoy so much as a warm climate!

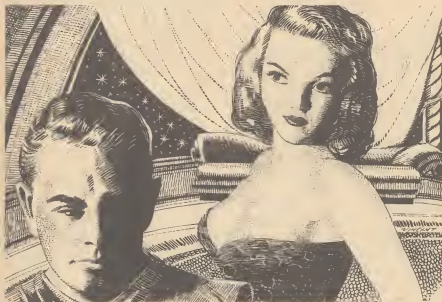
W.T.

All readers are invited to voice their opinions on this subject. We will print as many letters as space will allow in our next issue. Address: Feature Editor, MARVEL SCIENCE FICTION, Stadium Publishing Corporation, 350 Fifth Ave., New York 1, N.Y.

IN SPRING A YOUNG MAN'S FANCY TURNED LIGHTLY TO . . .
THE VOTING TOTE! - - - - - AN EXCITING NOVELET!

YES AND NO

by KRIS NEVILLE



A Venusian girl couldn't just up and marry an Earth man. The legislature had to pass a bill first. And the legislature was the Greatest Deliberate Body the universe had ever known. . . .

CHAPTER I

THE HOT SUN came down, baking the desert capital of the Federation. Wheels rolled toward it, wheels-rolled away from it. Ships roared upward. The communication channels chattered information, gossip, rumor, speculation, fabrication, and local color to the whole of the system. The cogs of government,

after lunch, meshed.

There they sat, row on row: the lame, the halt, the senile, the—in short, the Greatest Deliberative Body the universe had ever known. Vegetating placidly until they were called upon to deliberate.

Which would occur just as soon as the Speaker could discover what was the order of business for the day. A clerk finally reminded him that it was

Every - Other - Thursday, the day on which they turned from normal Federation business to act as steering committee for Janitors' Local Number Four.

The Speaker cleared his throat. "Gentlemen, gentlemen," he said.

Instantly a representative was on his feet. "Can't trust them damn foreigners!" he roared.

A colleague dragged him down. "Shut up! That's for tomorrow."

When quiet (comparative) resumed, the Speaker said, "We seem to have three separate pieces of legislation today in regard to the Janitors' Local."

In the foyer, a drunken representative, imagining himself at a cocktail party, muttered endless obscenities.

The Administration goad arose. "First," he said, "before we take up that. . ."

He was immediately drowned out by anguished wails of "Politics, politics, politics," from the floor, and one thin voice piping above all the rest, "Where in hell's the money coming from?"

Behind the Speaker, the as yet incomplete voting-tote peered down at the assembly with its multiple recording eyes. It represented the second great impact of technology upon the Elected; the first had been the electric light. . .

Three days out from Venus to Earth, the liner, *Snowbird*, chuffed along through space. She carried six passengers and a cargo hold full of Venusian pears.

The passengers lolled discontentedly in the recreation area. A business man from Vega kept alternating his attention between a trade journal and the deck head. Two female teachers sat together, next to him, each studying travel

folders about where they had spent their vacation. One, gleefully recognizing a picture, nudged the other, "Oh, look! Here's Zeabaum. You remember Zeabaum?" The other, looking skeptical, bent to deny, but, after a moment, her expression changing to one of self satisfaction, verified, "That's Zeabaum all right!" A fourth passenger, returning to Earth for the sake of his health, stood staring morosely at the fading bulkhead murals.

The two remaining passengers, a Venusian girl of perhaps twenty-five and an Earth man some ten or twelve years her senior, sat apart from the rest, whispering to themselves; once the man laughed hoarsely.

After a while, the young man left off with the murals and drifted over to their chairs. "Excuse me," he said. "I wonder if I might join you?"

The man furrowed his brow and frowned in instant annoyance, and the girl smiled, vaguely puzzled.

"It gets lonely, not having anybody to talk with," he amplified. He put his hands in his pockets and inclined his head forward awkwardly. "You know what I mean? I thought you were both from Meizque, my home city, from your accents, and. . ."

"I don't own the chair," the man said, jerking his head in its direction. "Sit down."

The Venusian girl turned to him. "That's not very polite, Roger. You can at least be polite, can't you?"

Roger growled under his breath. The young man straightened up. His ears getting red. "I didn't intend to seem like a bore."

"Skip it. Sit down," Roger said uncivily.

The young man's lips twitched. "Thanks," he said. "I think I'd rather not." He turned and stalked back to the murals.

He put his hands in his pockets, hunched his head forward again. He shifted uncomfortably. His ears were still red. He looked like he wanted to whistle. He yawned and blinked his eyes. He shuffled a few steps to get a better view of the left end of the painting.

From behind him, he heard the clip-clop of feet. He felt an arm touch lightly on his shoulder. The hands came out of his pockets, and he whirled around.

"I'm sorry about Roger," the girl said. "I want to apologize for him."

"It's all right," he mumbled.

"I knew you just wanted to be friendly," she said. "Sometimes Roger's short tempered like that. He really doesn't mean it. If you knew him, you'd know that."

"I shouldn't have tried to butt in."

"I didn't really mind. We weren't talking about anything important. Won't you join us, now? I sent him below for some drinks. He's getting you one. After he thought it over a minute, he was sorry."

"All . . . I mean, if you're sure it's all right."

"Of course," she said, smiling.

She led him across the room to the deck chairs. "You sit here," she said, and then she settled into the next chair.

"My name's Sela," she said.

"I'm Jack. Jack Poley."

She laughed lightly at the odd, Earth name. "How long did you live in Meizque?"

"Almost ten years. My father's a colonel in the army stationed there.

I went to the University, and then I started working for the Federation government. But I'm going back to Earth, because of my health."

The man named Roger was crossing the small room toward them; he carried a tray of drinks, balanced professionally. "I hope you like *laqori*. I brought you one." He handed Jack the frosty glass.

"Thanks . . . uh . . . I don't usually drink, but when I do, it's my favorite."

"Sela gave me hell for snapping at you," Roger said. He smiled. "She was right, of course. I hope you'll forget it?"

"I shouldn't have tried to butt in," he said.

"No. That was all right. Really."

Sela accepted the drink. "Roger's worrying about a business deal. It always makes him touchy. By the way, Roger: this is Jack Poley. Jack, Roger Croy."

"How do you do," Jack said politely.

Roger sat down to the right of the Venusian girl. "So you're from Meizque?" Roger said.

"Roger's the head of Trans-Planet, there. Maybe you've heard of it?"

Jack Poley set the glass of *laqori* down carefully. "The president of Trans-Planet?" he asked in astonishment.

Roger smiled. "That's right. This is my own personal secretary, Miss Zean."

"Well . . . I mean. If I'd known that, I wouldn't have . . . I mean . . ."

Roger chuckled. "It doesn't matter," he said, waving his hand.

"Well, I know, but . . ."

Sela reached over and handed him back his drink.

He took it.

"He's all right," she said, smiling. "He won't bite you. See, I'm not afraid of him."

Jack tasted the drink. "You must be awfully busy," he said, "running such a big corporation as that."

Roger Croy shrugged. "Not as busy as I like to pretend. I'm practically on a vacation right now: one little deal in Yuma, and then Sela and I are going to the Riviera for a month."

Jack drained his glass. He twisted uncomfortably on the seat. Suddenly he stood up. "I just thought of something," he lied. "I've got to go down to my cabin. I hope you'll excuse me for taking up your time this way."

Roger gave him a friendly smile. "We'll see you at dinner."

After he was gone, Roger settled back and sighed. "You can't help but like that kid, can you?"

"I think he was terrified at meeting Mr. R. J. Croy in person," Sela said.

Roger nodded his head in amusement. "He looked like a nice sort. You know what I think?"

"No. What?"

"I think he wanted to meet you when he came over here. He's been watching you. I've noticed. I'm not so sure that he's not about halfway in love with you already."

Sela raised her eyebrows. "He's such a boy," she said. "He's hardly as old as I am."

Roger bent toward his drink. "I think," he said, "you've been watching him, too." He turned to study her face. "What do you say about that?"

"And I think you're jealous," she said teasingly.

"No. I mean, really. You know how it is with us. I just wouldn't want to

see you get tangled up with a kid like that. You could be pretty unhappy. Remember, he's an Earth man."

"So are you," she said flippantly.

"But we're not—in love—are we?" he asked. "It makes a lot of difference."

"You're talking nonsense," she said seriously. "I've only just seen the boy these last couple of days, and here you've almost got us married."

He held his glass up to the light. "I think I know you pretty well," he said. "But you're a funny one, and I don't ever know quite what to make of you."

CHAPTER II

"YARP," SAID THE representative, bobbing his head happily. "Yarp."

The Service Section man, Fred, picked up a key. He held it up for Representative Filch's inspection. "Now, you insert this in the slot and turn." Bending forward, he demonstrated on the model that rested on the representative's desk. The model was plugged into a wall socket, and when the key turned, the model panel lit up. "This blank space here, that's lit now," Fred went on, "will contain a televised picture of the legislation under consideration."

"Yarp," said Representative Filch.

Fred's assistant, Long Tom Johnny, bent across the model and pointed to the focusing dial. "You focus with this thing," he said. "Each box will have a picture tube adjusted to the individual's eyes for whom it is intended, so you won't have much need of it, but there's where it is."

The representative smiled and nodded. "Yarp," he said, "Plain's day."

"Good," Fred said. "Will you come around here, now, sir?"

The representative stood up and ambled around the desk. He assumed a position behind Fred and stood squinting over the Service Section man's shoulder. His hands hung uselessly at his sides.

"You see these two little buttons?"

"Yarp."

"Well, when you turn your box on with your own special key, you are now ready to vote. You simply push one of these." He pointed.

The representative licked his lips.

"One says 'Yes' and the other says 'No'."

"Oh, yeah. They do, don't they? Which is which?"

The Service Section man remained impassive. "The one on your right is 'Yes'."

The representative studied the board blankly for a moment, struggling. "Then t'other one's 'No', huh?"

"That's right, sir. Now let's review it. Which button did I say was which?"

"Uh . . ." The Honorable Mr. Filch wrinkled his brow in concentration. "Le's see, now, uh, the one one my right is 'Yes', the one on my left, 'No'. Yarp, that's it." He shook his head. "But I can't say's how I don't mistrust that gadget."

Fred cleared his throat. "Now show me the 'No' button."

Representative Filch advanced his right hand tentatively. It fluttered out toward the 'Yes' button, but just before he touched it, he noticed the expression on Long Tom Johnny's face. He jerked his hand to the other button.

"Yarp," he said happily. "That's her."

"Very good, sir."

The representative straightened up. "Well," he said, "Thanks for coming around and showing me this here now votin' machine. Can't say I favor 'em. But I suppose I'll have to learn to use one. Well, I gotta rush off, now, to a meetin' of the Committee on Research in the Natural Sciences. I'm the Chairman. Yarp, I'm the Chairman."

After he was gone, the two Service Section men began to disconnect the demonstration model. Long Tom Johnny, after he had coiled up the electric cord, straightened up and said, "In some respects, sometimes, I just don't know."

Fred dropped the model in the carrying case. "Say what you will, Representative Filch is a fine politician."

The two men walked out of the office carrying a demonstration voting unit of the voting-tote. It was said to be fool-proof.

THE SNOWBIRD WAS ten days along on its thirteen day crossing from Venus to Earth.

Sela Zean sat in her cabin waiting for Roger. Every few minutes, she brushed nervously at her silken, purple hair. It was long hair, cascading over her bare shoulders, tumbling half way down her back. Her hands were slender and delicate, the nails closely trimmed and well cared for. Her eyes shifted to the door and then away from it: the round, doll blue eyes of Venusians. She was wearing a white formal, low cut, that set off her figure, attracting the eye to this and this and this excellence. After a while, she stood up

and went to the cabinet. She poured herself a drink. As she tasted it, the cabin door opened.

"Roger," she said. "I was just having a drink. Would you care for one?"

"Thanks. Not right now." He closed the door softly and crossed to the bed, where he sat down. "Boy," he said, "my cabin's a mess: papers all over it."

Sela carried her drink over to a lounge chair. She moved a stack of papers from it to the floor and then sank into it. She stretched. "I finished up what you wanted me to do hours ago." She sipped at the drink, inspecting him closely over the rim of the glass.

He lit a long, Vegan cigarette. "We're most caught up, now. Pretty soon we can start to enjoy ourselves."

She did not answer. He blew a lung full of the faintly greenish smoke toward the air grill. "You were up 'til all hours — ship time — with Jack again last night, weren't you? That makes three nights straight, doesn't it? You weren't in here when I came by."

"I was in his cabin. We were talking."

Roger Croy studied his cigarette. Sela remained silent and motionless. Finally, he inhaled deeply.

"You have a streak of . . . I don't quite know the word to use . . . not exactly idealism, but something like that, if you know what I mean?"

"I think I know," Sela said.

"Maybe what I mean, you have a sort of reservoir of affection, waiting for somebody to come along and tap it. It's pretty hard to get at." He blew smoke. "I never could."

"I wouldn't say that, Roger."

He smiled. "You know what I

mean." He turned to face her. "Look. I think I'll take the drink, if you don't mind. The two of us look like we might sit here and start to sound like a soap opera."

"I'll do the honors," she said. She walked to the cabinet and mixed the drink: two and a third jiggers of *zeno*, three drops of lemon, two cubes of sugar, a splash of soda.

"You know just how I like it," he said, sipping at it. "You're a very handy girl to have around . . . I think I'm going to feel happy, tonight. Mind?"

"Go ahead," she said.

"I was thinking about the month vacation. I've got a lot of things to show you. There's the — hey, what's the matter?"

"Nothing," she said. "Go on."

"Well, I'll be damned," he said, crushing out the cigarette. "Come on. Tell all to father Croy."

"He asked me to marry him last night."

"Well, now, I *will* be damned." He took a swallow of the *zeno* cocktail. "And what did you tell him?"

"I . . . nothing."

He narrowed his eyes. He expelled his breath forcefully. "Well!"

". . . What made you say you thought I was in love with him, a few days ago?"

"I know you, Sela. It's the sort of . . . of . . . well, *romantic* thing you'd be likely to do. It's just like you, somehow. I really don't know how serious I was the other night when I said that."

She moved uneasily in the chair. She bit her lip with even, white teeth. "I don't know whether I am or not. I honestly don't know. I try to think, and somehow everything goes blurry. I

guess it's kind of silly, isn't it, Roger?"

"What kind of a guy is he?"

"I really don't even know that. A lonely kid. He needs somebody. He seemed almost half afraid of me. You should have seen his proposal: like a schoolboy saying something he might get whipped for."

"I meant what kind of a future? What kind of a business man is he?"

She looked up into his eyes. "I don't care. You know I never cared about that."

He glanced away from her face.

"If you mean money — I have a little. Enough for a while, I guess. He's a chemist or something. He could earn enough for us to live on."

Roger Croy cleared his throat in embarrassment. "Sela, I'm very fond of you. You're a damn' good secretary, and a damn' good—well—girl friend. I wouldn't want to see you hurt. Listen, I've seen these mixed marriages, I'm dead serious: they're no good."

She reached out for her drink again. "I don't see that that would matter, if we were really in love."

Roger Croy shrugged. "It's hard. I mean, after the . . . well, love sort of dies, the marriage has to depend on something stronger." He took out another cigarette.

"You're smoking too much," she said almost automatically. "You just put one out."

He laughed. "I'll miss you. I can see that. We would have had a wonderful time on the vacation. . . ."

She shook her head slowly, her eyes serious.

"Yes, I guess that did sound a little like a bribe, didn't it?"

"I know you didn't really mean it

like that. You know me well enough to know that things like that don't matter. They're not important."

"I know," he said. He lit the cigarette. "I don't guess there's any sense trying to tell you I feel like hell about this. It's no play for sympathy: it's simply fact."

"I haven't said, yet, I'd accept."

He leaned forward, and the bed creaked under him. "No. But I was watching you. When I told you a mixed marriage wouldn't work, I could see that little streak of stubbornness on your face. You felt that little desire of yours to prove everybody else is wrong. And the devil of it is, you're usually right, too."

She stood up and crossed the room to him. She smiled wryly, raising her eyebrows. "You know me pretty well."

He reached toward her hair; he stroked it gently, letting the strands flow like water through his hands. "Not well enough. If I did, I'd know some way to make—make you feel about me the way you do about him."

"You're a wonderful guy," she said. "I mean it. But . . . you don't need me, do you?"

He sighed. "Will you live in Meizque? I'll get him a job there, if you want me to."

"We're going to live on Earth. He can't live on Venus any more."

"Oh? . . . It's worse there," Roger Croy said. "You'll have to get permission to marry. That's pretty hard. Their legislature has to pass a bill."

"I know."

"I'll see what I can do," Roger said. "If I can get him some sort of a job there. He's a chemist, you say? Honest to God, I wish . . . Never mind. I sup-

pose you've told him about us?"

"Good Lord," she said lightly, "I hardly know him!" She bent forward and kissed Roger on the forehead. "Yet!" she added emphatically.

He stood up. "Well, I guess I better say good night."

At the door, he turned. He stared at her for a long moment. Then he looked around the room.

"I mean this," he said slowly. "All the luck in the world."

"You sound so morbid. I'm still your secretary. I'll be eating breakfast with you. You make it sound like I'll never see you again."

"Well, in a way, it is goodby, isn't it?"

She swallowed. "I . . . know. Goodby . . . dear."

When the door closed, she was surprised to find herself crying.

CHAPTER III.

"OF COURSE, HYSTERIA is best," the lobbyist admitted. "But when we can't use it, we can't use it. We're looking forward to that day. We have a new technique. The blind stampede."

"Go on," said the employer. "Please go on."

"You are familiar with the new voting machine?"

"Familiar with it? Didn't I spend 300,000 credits *figh*ting it?"

The lobbyist pursed his lips and clicked his tongue consolingly. "Don't take it so hard. We can oppose progress only so long. A few hundred years. Then there comes a time . . ."

The employer looked down-cast.

"But perhaps it will turn out for the

best," the lobbyist said.

Slowly, very slowly, the employer shook his head. "The Golden Age is gone. Now, every representative will have his every vote registered. His every vote. It's—it's undemocratic. It's a violation of conscience. It's a violation of the Australian Ballot. It's a . . ."

"Easy, easy . . ."

"How can we tie up the legislature for weeks with roll calls? How can we paralyze them for months in parliamentary niceties? How can we kill bills year after year by honest, democratic subterfuge?"

"We'll find new ways," the lobbyist said.

"Yes, but . . ."

"Now, listen. We can usually whip up hysteria, can't we?"

"It's getting harder," the employer said. He had a sudden, horrible thought. "Maybe the people are getting smarter!"

"No. That's absurd. The theory of genetic drag, of the gene pool, proves we're safe there."

"Oh."

"In big issues, we'll continue with hysteria, fabrication, smear, innuendo, and bribes. But in little, everyday issues, our psychologists have developed the *psychology of the voting tote*."

"Tell—me—more."

Roger Croy had a suite in a down town hotel. The telephone, at his elbow, purred. He flicked on a "Vision-screen", and, in the base square, he picked up the picture of the caller: an operator. "I have your party in Yuma, now," she said musically. Roger glanced across the room at his secretary and Jack. "Never mind," he said. "I'll phone

back. I'm busy right now." He replaced the receiver.

"Please don't let me keep you away from business," Jack said, thrusting his head forward nervously. "I've really got to leave anyway. I'm trying to get an appointment with my representative. I should be half way to the capital now." He stood up. He moved his hands awkwardly. "Thanks for everything, Mr. Croy. You take care of Sela while I'm gone, won't you?" He turned to the girl. "I'll try to get through in a week. My lawyer said, if I was lucky, it shouldn't take more than that." He walked to the door.

She crossed the room to him, kissed him lightly. "Hurry back," she said.

"I will," he promised. He let himself out.

"Damn it, I still like the kid," Roger said after the door had closed. "I wish you'd gone on with him to the capital."

"No," she said. "I'd be a fine secretary to run off and leave you until after this week. Then I'll join him."

"Thanks, Sela, you're square. I've got a hunch this marriage is going to work out. I hope it does. You're the kind that just falls one time."

"I know it will," she said.

She crossed to her improvised desk at the far side of the room, next to the window. Glancing out the window, she could see air taxis flashing by on the six lanes above the roof tops. Several family helicopters fluttered like pieces of torn paper in the sky. "It's a different world, isn't it?" she said.

"Yeah . . .," Roger said. "And the world's all right. The natives on the other hand . . ."

"You're one," she said. "Jack's one."

"We're more Venusian. We're more like you, really."

She laughed. "Honestly—it's not as bad on Venusians now as it was twenty years ago: they seem to treat me fine."

Roger Croy nodded. "Still. It would be better if you could live on Venus. Not nearly so much antagonism. Look, Sela . . ."

"No, I'm sorry, Roger."

". . . I'd like to get you a wedding present."

"Oh!" Sela turned from the window. She looked at him with a half teasing smile. "If it's something useful and inexpensive."

He laughed explosively. "In good taste, you mean? Did you expect I'd send you a diamond bracelet?"

"Touche," she said.

Roger crossed to her desk and stood looking down at her. "What I had in mind was something valuable but inexpensive. I thought I might be able to get your marriage bill before the Elected for you."

She wrinkled her brow prettily. ". . . Jack . . ."

He glanced out the window. "I used to live here, remember. I know the ropes. When his lawyer said 'week', he was probably thinking 'year'."

Her eyes were suddenly serious.

"Like the mill of the Gods," Roger continued, "the legislative mill grinds slowly—and exceedingly small."

"Wait a minute, Roger. I'm afraid I don't quite understand."

Roger Croy took out a cigarette, lit it. He seemed to be studying his words in advance. "The world of politics on this planet," he said slowly, "is a weird sort of half world. There's no other way to put it. The more you think of it,

the more unreal it seems. After a while, your mind gets numb, and after that, you finally come to regard the whole thing as perfectly normal and slightly humorous. That way you save your sanity. If you fall to brooding over it. . . ."

"What sort of nonsense is this?" Sela asked.

Roger turned from the window and knocked his ash off into the built-in tray on the desk. "You'll see. You've never seen anything like it before."

"But surely . . . They'll pass our bill, won't they? There isn't any doubt about that, is there? They don't have any reason not to?"

"Oh, sure. They'll pass it. Probably. Because it has no connection, even remotely, with politics. There shouldn't be any trouble." He smiled twistedly. "If you can get it on the floor."

Sela stood up. "Jack said. . . ."

"Sit down, sit down. I've been thinking about it, Sela. Since you won't let me get him a job, or try to set him up in business of some sort, the least I can do is this. I happen to know a few people here and a few more on Venus. One of them will know how to get your bill on the floor as quickly as possible. You won't object to me helping you on that, will you?"

"It isn't . . . You know how I feel. Of course I wouldn't. It would be—damn' fine of you, Roger."

"Okay. Thanks. Once you get the bill on the floor, the rest is pretty automatic, usually. You want to take some cables? We'll see what kind of action we can get."

"GENTLEMEN," the lobbyist said to a select and secret group of backers, most of whom were World-Firsters, a 200% patriotic organization, "how do you feel about the plan now?"

There was a low rumble of qualified assent around the table. The meal of sliced filet of beef, and Manhattans and Martinis and Scotch and Bourbon—not to mention a light, red table wine—had put the backers in a reasonable mood. Here and there a good cigar steamed bluely.

"We certainly intend to conduct a test," the lobbyist continued, beaming at the guests. "I have already alerted the members who give us unquestioning support. They are divided into two cells: A and B. I will personally vote the cells from the gallery as soon as we can decide on an appropriate test bill. They will vote in two blocks: each block voting as a man at the psychologically correct moment to stampede the remaining members. Fortunately, the number required will not be large, and, it is anticipated, once the band wagon is rolling, it cannot be stopped except by similar counter measures."

Again there was a mumble of qualified assent.

"Unfortunately," the lobbyist went on, "we can't act this week. The representatives are too pleased with their new toy. They're liable to vote any way, just to watch the lights light up. The novelty should be worn off in a couple of weeks. But week after next, they're

going to be busy citing people for contempt, and, of course, we wouldn't want to interfere with anything like that. But the third week, there will be a number of routine bills. I will choose one—completely nonpolitical—whose passage is assured and then, as proof of our contention, defeat it by psychological voting."

"Good." "Good." "Good."

It was the butt end of the legislative season. The chamber was rather full—most members had used up all 103 of their legal absences. The room was hot and the representatives were listless.

At 2:04 the clerk called the Elected to order, and the Speaker mounted the rostrum.

In the gallery there was a splattering of curious visitors, all from out of town.

On the far right, there was the lobbyist.

The scribe, an aged, shriveled little fellow, who had served for over a quarter of a century, hovered with shorthand pencil to catch and preserve for posterity each golden word. Occasionally he darted a fretful glance over his shoulder at the voting tote; each time, resentment flickered over his leathery face—as if he feared, eventually, some mechanical contrivance would usurp his job.

Sela and Jack entered the gallery. They made their way toward the front. Eyes of spectators turned in the direction of the Venusian, and there was one exuberant wolf calls from one of the younger members on the floor.

The Speaker cleared his throat, surveyed the field, hammered the gavel, and business began.

Representative Filch, bustling in, puffing importantly through his generous and livid nostrils, hurried to his desk. His tiny eyes darted this way and that. He sat down in nervous haste, fumbled out his key, inserted it, activated his voting circuit. He pushed a button, under the impression that voting had already begun. He did not want to be left out, for he had already been absent one day over the allotted amount.

His circuit automatically went dead, and on the voting tote a light flashed "Yes" under the square for seat 316, directly in the center of the board. The control technician, at the switches, to the left of the tote, cleared his throat in annoyance. He muttered something to himself about 316, for, single voting sometimes overloaded a circuit, frequently weakening the voting light. He threw the reactivating switch. Representative Filch's circuit was again connected. The technician cleared the tote: it registered the total: one affirmative vote.

Representative Filch slumped down in his seat and looked around; his face showed plainly that he thought he had been foully handled.

The reading of a bill began. The clerk in charge mumbled rapidly, his voice carrying no inflection, the words conveying, in their formlessness, no shred of meaning. On each desk, the televised copy appeared.

The routine bill came to the routine vote. It took five minutes for all members to get their opinions cast. One took the floor during the process to protest that his vote had been misrecorded. "I pushed the 'No' button and that damn thing registered my vote as 'Yes'." He was one of the members who had spok-

en loudest against the installation of the tote.

The technician wearily suppressed his square, and the negative vote was tallied by hand onto the total. The representative stood by his desk, jamming his finger hard, time and again, into the deactivated 'No' button. There was a martyred set to his jaw.

"Bill six, three-fifty," the clerk droned. "Inaccordancewiththeexpress willof . . . themarriageofanEarthmantoa Venusianwoman . . . isherebyrequest-edthatpermissionbegrantedfor . . ."

"That's us," Jack said, leaning forward intently, to catch the words.

Beside him, Sela turned to whisper, "I'm afraid." Her face was tense.

Pair after pair of eyes turned from the Speaker to focus for a brief instant on the lobbyist in the right gallery. Very slowly he inclined his head and sniffed the wild flower fastened in his lapel.

Sections of suspense seemed suddenly to descend on the Elected. Several members folded their papers and placed them neatly on their desks. One or two men bent to nudge their dozing colleagues into consciousness.

No one seemed more than to glance at the televised copy of the bill.

The clerk finished the reading.

Sela's hand had found Jack's.

"We'll now record," the Speaker announced.

There was a moment of complete inactivity.

The lobbyist was on the edge of his seat, watching the board intently.

The first vote come in: "Yes."

Another: "Yes."

A third: "Yes."

The lobbyist bobbed his head toward cell A.

"No, no, no, no, no, no, no." Resounding negation seemed to inundate the opposition.

Sela drew in her breath sharply.

A yes popped lit among the no's. It seemed weak and almost apologetic.

A pair of no's.

Then voting ceased. Representatives watched the board uncertainly.

Representative Filch wrinkled his brow. As near as he could tell, he was completely neutral to the bill. He could not recall having been read a single letter from a constituent about it one way or the other. He licked his lips. Best to vote with the rest. They knew what they were doing. Even if they didn't, it's always best to be with the majority. He waited, trying to discover for sure which way the wind was blowing.

The lobbyist bobbed his head toward cell B.

The second spate of No's cluttered the board.

Sela and Jack stared at each other in hurt disbelief.

Representative Filch shrugged his shoulders. Why be different? He reached out and pushed the "Yes" button, having, for the moment, confused them again in his mind. He did not even bother to check his vote but settled back into blissful lassitude.

His yes zipped along the wire. His center square flared brilliantly as a light sometimes does before burning out.

In the brief flash, the minds behind a dozen hesitant hands noticed the unusual vehemence of the assent. Yes was firmly impressed on them. They voted. And a new stampede, in the opposite direction, began.

• End



A POSTERIORI

A short story was your top choice. Over the featured novel and novelette. That was the thing that struck us above all else in studying your rating of the fiction in the last MARVEL. Betsy Curtis' *The Ones*, the novel, and William Tenn's novelette *Hollock's Madness*, did take second and third places respectively, but Jock Vance's short story *Golden Girl* was first.

In this present issue we have gone on the assumption that the more big stories we give you, the better you will like it—so novelettes predominate. But, in preparing the next issue we are keeping your rating strictly in mind. Ordinarily on extended piece of writing will perforce have a greater impact on a reader than a brief one; by sheer long acquaintance with the characters, the reader will usually come to feel deeper interest in and sympathy for them. You, however, in your stated preferences, have shown sharply artistic, highly intellectual judgment. You have indicated that you prefer the little jewel over the big, "great" work. This, we believe, is the most interesting truth to be drawn here.

A secondary indication we are wondering about: was the intriguingly lovely young lady in *Golden Girl* in any measure a factor in your giving it first honors? Or was this only coincidental—was the romantic appeal such an integral part of the theme (as with the girl-sprite in W. H. Hudson's classic *Green Mansions*) that it became simply a sort of pleasant aura around the story? Your letters didn't say much about this, so until we have more proof of your proclivity, we'll keep Sex relatively subordinated.

The rating, based on your letters, follows:

RATING	AVERAGE	TITLE	AUTHOR
1.	3.2	GOLDEN GIRL (short)	JACK VANCE
2.	3.3	THE ONES (novel)	BETSY CURTIS
3.	3.7	HALLOCK'S MADNESS (novelette)	WILLIAM TENN
4.	3.8	SECOND ADVENT (short)	MACK REYNOLDS
5.	4.3	CAPTAIN WYXTHILL'S FLYING SAUCER (short)	ARTHUR C. CLARKE
6.	5.2	THE THING (short)	RICHARD MATHESON
7.	5.3	CIRCLE (short)	MILTON LESSER
8.	5.6	POLYOID (short)	BYRCE WALTON

—THE EDITORS

HOW MANY WAYS CAN THE WORLD END?

We live and see by the sun. It pours forth an unceasing stream of heat and light, at a rate corresponding to a loss of mass of more than 4,000,000 tons per sec-



Pulled too close to sun, earth will be consumed by heat.

ond. While there is a difference among scientists as to the length of time this enormous loss can continue, all agree that some time in the future the sun must die.... *Novae* are ordinarily nice, easy-going stars which suddenly explode with the fury of a million man-made A-bombs. Our sun could suddenly become a *nova*. And if that happens, the outburst of hot gases will burn the earth to a crisp. . . . One day, the moon



A Star explodes, showers meteors on our planet. Oceans boil; raging fire consumes whole world.

will begin to creep closer and closer to us, until finally, when it gets within 8,000 miles, it will burst open and pour forth torrents of white-hot lava upon the earth. And these are only a few of the cataclysmic ways the world can end.

Photos: American Museum of Natural History, N.Y.



Ultimate cooling of sun will cause earth to become a frozen mass — in a billion years...

MARVEL'S COVER-TITLE CONTEST

Here is another science-fiction contest for our readers and fans. To those who didn't win the last time we can only say: "Try again, and keep on trying. It doesn't cost anything." Here's what you do:

1. Think up a title for this month's cover painting by artist Hannes Bok.
2. Include this in your letter to "Under the Lens," or jot it down on your story-rating ballot.
3. Send it off to The Editor, Marvel Science Fiction, Stadium Publishing Corporation, 350 Fifth Ave., New York 1, N.Y.

**For the most interesting and original titles
the following prizes will be awarded:**

1st Prize — The original manuscripts of this month's controversy, "Where Should The First Spaceship Go?" by Willy Ley, Judith Merrill and William Tenn, including the original pen and ink portraits of these famous authors.

2nd through 6th Prize — The original art-work for the illustrations appearing in this issue of MARVEL.

All winners will be announced in the next issue of MARVEL.

CONTEST RULES

1. Only one entry may be submitted by each reader.
2. Anyone may enter this contest except the members of MARVEL SCIENCE FICTION staff.
3. All titles become the property of Stadium Publishing Corporation and will not be returned.
4. Decisions of our judges will be final.

If you'd like to own one of these fine science-fictional prizes, get that letter off, with your title-entry, today!

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